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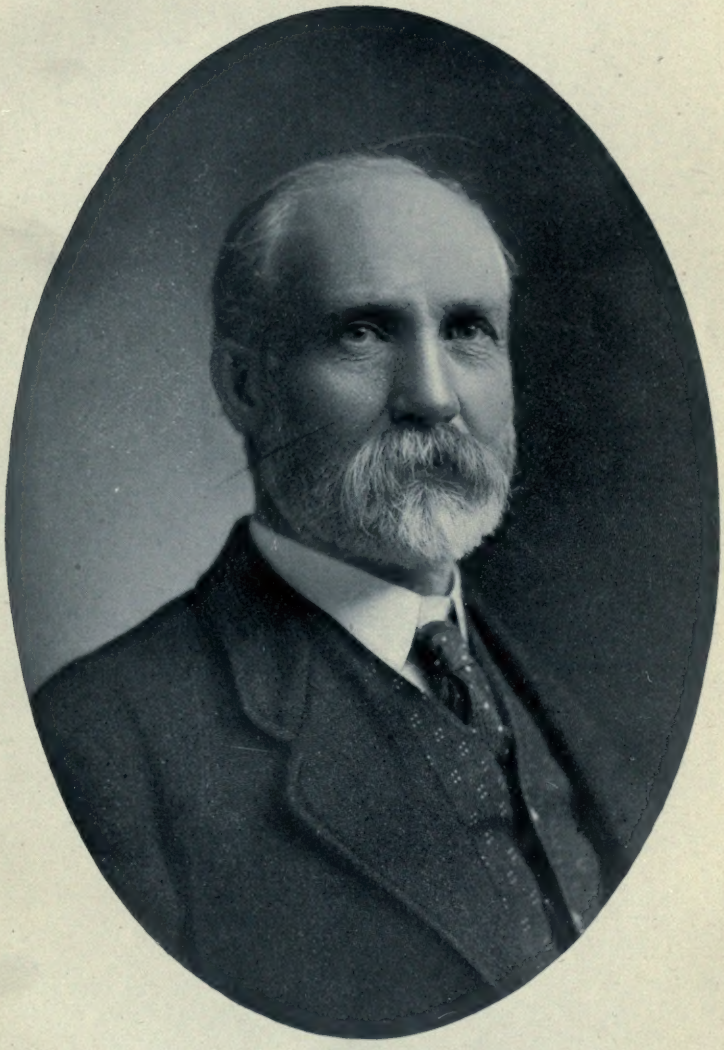

A. P. COLEMAN, F.R.S., Ph.D.

Past President, Alpine Club of Canada

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CANADIAN ALPINE JOURNAL

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CANADIAN ALPINE JOURNAL

VOL. IX

PUBLISHED BY
THE ALPINE CLUB OF CANADA

MEMBERS ON IMPERIAL AND AMERICAN WAR SERVICE

L. S. Amery .....14th Royal Warwickshire
(Captain, General Staff)
W. A. Alldritt .....90th Regiment
(Sergeant, prisoner, escaped)
H. Anderson .....13th Can. Field Ambulance
(Lieut.-Col., M.O., Croix de Guerre)
Mrs. H. Anderson .....Nurse
R. G. Annand .....50th Battalion
(Sergeant)
I. N. Austin .....104th Field Ambulance

Rev. W. R. Ball .....49th Battalion
(Captain, wounded)
F. C. Bell .....Asst. Director of Medical Service
(Lieut.-Col. M.O., wounded, mentioned in despatches twice)
H. Bennett .....Divisional Signallers
(Lieutenant)
P. R. Brecken .....Y.M.C.A.
M. Bright .....Intelligence Corps
(Lieutenant, wounded)
W. E. L. Broad .....137th Battalion
(Lieutenant, killed in action)
E. W. Bickle .....48th Highlanders
(Captain, wounded)
F. C. Brown .....1st Can. Reserve Battn. (B.C.)
(Lieutenant, wounded)
W. C. Bruce .....Can. Engineers
Rev. E. M. Burwash .....
(Captain)

G. Cameron .....Royal Air Force
(Lieutenant)
K. C. Campbell .....43rd Battalion
(Major)

R. J. Casement .....Can. Engineers
(Lieutenant, D.C.M.)
C. G. Chinneck .....13th Mounted Rifles
(Sergeant)
J. A. Clark .....72nd Battalion
(Lieut.-Col., D.S.O., and bar)
R. P. Clark .....14th Battalion
(Lieut.-Col., Staff Officer, Military Cross, wounded)
J. H. Colville .....R.A.F.
(Lieutenant, wounded)
J. H. Cuntz .....Signal Corps, U.S.A.
(Captain)

G. Darling .....No. 9 Battalion, Tank Corps
(Lieutenant)
W. R. Dyer .....1st Depot Battn. Alberta Regt.

A. Eastham .....
J. E. C. Eaton .....Artist's Rifles
(Captain)

Rev. W. F. O'N. Fisher .....
(Captain, C.F.)
C. E. Fortin .....Lord Strathcona Horse
(Captain, M.O.)
H. W. A. Foster .....20th Battalion
(Major, D.S.O., Military Cross and bar, three times wounded)
W. W. Foster .....52nd Battalion
(Lieut.-Col., D.S.O. and bar, Belgian Croix de Guerre, wounded, three times mentioned in despatches)
T. Fitzsimon .....Royal Air Force

Rev. A. Gillies-Wilken .....C.M.R.
(Captain, C.F., prisoner, exchanged)
Rev. A. M. Gordon .....4th Can. Division
(Major, C.F., M.C.)
C. W. Gray .....Headquarters Staff
(wounded)
W. F. Guild .....52nd Can. Infantry
(Major, died of wounds, mentioned in despatches)
J. A. Gunn .....No. 1 Can. Gen. Hospital
(Lieut.-Col., M.O.)
J. N. Gunn .....8th Can. Field Ambulance
(Lieut.-Col., M.O.)

G. L. Haggen .....Oxford and Bucks Regt.
(Captain)
H. S. Hall, Jr. .....Inf. R.C., U.S.A.
(Lieutenant)
Mrs. J. W. Henshaw .....
(Hon. Captain)

CAPT. E. N. WHITE

1st Battn. Middlesex Regt.

Killed in Action at Ypres, 25th Sept., 1917

J. A. Hesketh .....11th Battn., Can. Ry. Troops
(Lieut.-Col., C.M.G., D.S.O., mentioned in despatches)
G. E. Howard .....Artist's Rifles
(Quartermaster Sergeant)
P. M. Humme .....Can. Machine Gun Corps
(Lieut., Reconnaissance Officer)

J. R. N. Irven .....3rd Battn. Rifle Brigade
(Captain and Adjt., wounded)

A. C. C. Johnston .....5th Battalion
(Captain, M.O., M.C.)
S. L. Jones .....Princess Patricias Light Infantry
(Major, prisoner, died of wounds)
Mrs. S. L. Jones .....Nurse, French Red Cross
(Lieutenant)

Miss M. H. Kilmer .....Nurse

W. S. Ladd .....Medical Reserve Corps, U.S.A.
(Lieutenant, M.O.)
F. V. Longstaff .....5th Battn., East Surrey Regt.
(Major)
T. G. Longstaff .....7th Hampshire Regt.
(Captain)

A. J. B. Milborne .....3rd Field Ambulance
(Captain, mentioned in despatches)
C. H. Mitchell .....Premier Staff Officer
(Lieut.-Colonel, C.M.G., D.S.O.,Second Imperial Army Officer's Cross Legion of Honour, Order of Leopold, Belgian Croix de Guerre, Order of Crown of Italy, mentioned four times in despatches)
Miss M. J. Monk .....Nurse
A. B. Morkill .....7th Battalion
(Captain, wounded)
A. H. MacCarthy ..... U.S.N., R.F.
(Lieut.-Commander)
R. C. Morrison .....187th Overseas Battalion
(Sergeant, killed in action)
K. D. McClelland .....O.R.C., U.S.A.
(Lieutenant)
J. C. McHutcheon .....Sherwood Forresters
(Lieutenant, died of wounds)
W. C. McNaught .....84th Battalion
(Captain)
Jas. G. McDougal .....202nd Battalion
(Lieutenant)
Miss E. McPhedran .....Nurse
E. S. MacGregor .....187th Battalion

G. L. Oliphant .....Battery 71, C.F.A.
(Corporal)

Sir James Outram
(Major)
J. C. Oxborough ..... 12th C.M.R.
(Corporal, killed in action)
W. Oxborough ..... 12th C.M.R.
(wounded)

R. E. Patterson ..... Fort Garry Horse
(Lieutenant)
W. F. M. Pearce ..... 1st Montreal Regt.
(Major, mentioned in despatches, wounded)
Donald Phillips ..... 78th Battery
Mrs. E. M. Phillips ..... V.A.D.
E. F. Pilkington ..... 6th Battery, Manchester Regt.
(Major)
J. M. Poucher ..... 51st Battalion
Rev. G. S. Provis ..... Attached 15th M.G. Co.
(Captain, C.F.)

R. I. Raiman ..... Y.M.C.A.
C. B. Reilly ..... 69th Battalion
(Captain, wounded)
C. B. Reynolds ..... 9th C.M.R.
(wounded)
A. E. Robertson ..... 5th G.A.
(Captain)
F. A. Robertson ..... 47th Battalion
(Major, wounded)
J. W. Ross ..... Orpington Hospital
(Captain, M.O.)

C. F. Savage ..... Northumberland Fusileers
(Lieutenant, wounded)
Miss J. T. Scott ..... Nurse
G. M. Smith ..... Princess Patricias Light Infantry
(Captain, M.C.)
R. H. Smith ..... 4th Field Ambulance
(died of wounds)
G. R. Street ..... 3rd Field Ambulance
(corporal)

E. L. T. Taylor ..... R.G.A.
(Lieutenant)
T. J. Taylor ..... Trench Mortar Battery
(Lieut., M.C., killed in action)
J. E. Tilleard .....
A. Tomlinson ..... 230 Can. Forestry Battn.
F. Trant ..... 14th Battalion
(wounded)
A. Tyler ..... U.S. Naval Aviation
J. Tyler ..... U.S. Aviation Service
(Lieutenant)

S. J. Unwin ..... Canadian Artillery
(Sergeant, died of wounds)

J. H. Vincent ..... 201st Field Artillery, U.S.A.
(Lieutenant)

SERGT. R. C. MORRISON

187th O. Battalion

Killed in Action at Lens, Aug. 21st, 1917

CORP. J. C. OXBOROUGH

12th C.M.R.

Killed in Action, October 31st, 1917

Miss H. Walcott .....Nurse
P. A. W. Wallace .....Divisional Signallers
Rev. T. G. Wallace .....M.D. No. 13
(Major, Senior Chaplain)
Miss K. Walker .....Nurse
H. Watts .....
(Captain)
A. W. Wakefield .....2nd Can. Stat. Hospital
(Captain, M.O.)
O. Q. Warren .....C.M.R.
(Lieutenant)
A. F. Wedgwood .....5th Battn., N. Staffordshire Regt.
(Captain, killed in action)
H. Westmorland .....C.M.R.
(Lieutenant)
E. O. Wheeler .....King George's Own Sappers and
(Captain R.E., M.C., Cross Miners
Legion of Honour, mentioned
four times in despatches)
Rev. G. D. Whitaker .....
(Captain, C.F.)
E. N. White .....1st Batt. Middlesex Regt.
(Captain, killed in action)
K. H. White .....M.T. Service
Rev. H. B. Winser .....
(Captain, wounded)
K. D. Woodworth .....Yacht Patrol
(Sub-Lieutenant)

J. R. Young .....H.B.M.G.C.
(Lieutenant)

COMMUNICATIONS FROM THE VICE-PRESIDENTS

France, July 26th, 1918.

Greetings. With you next year.

W. W. FOSTER.

G.H.Q., Italy,
Sunday, April 28th, 1918.

My dear Wheeler,—

I know you will think it very strange that I have not written you before this. Especially since I have been in Italy my letter writing has gone awry.

You know, of course, that we spent the anxious winter months on the Venetian Plain, and that for a time our G.H.Q. was at Padua, when about the New Year we got bombed out of it. It was a thrilling but not a pleasant experience, of which I cannot very well tell you enough to know what it was like—except that I am still picking pieces of glass out of our files. Then we moved out to rural parts for January to March, and about the first of the present month came up here to the mountains where, as the papers have already told you, we are in the Asiago region. (As I am responsible for all the censorship, both postal and press, in the British Forces in Italy, I know I am not transgressing in saying this.) But I must not tell you where our G.H.Q. is with respect to the mountains, nor say what mountains or valleys I can see from my window, but I wish you could see them; it would do you good to see such magnificent scenery in the middle of a war zone. As you doubtless know, these mountains rise directly from the Venetian Plain, straight up like a wall, and the little villages nestling on the lower slopes are most picturesque, with their white houses and

churches and tall, slender campaniles, their red roofs and vineyards in terraces. The roads are truly wonderful both in their condition and location, and I marvel at the Italian skill in this regard. There were, of course, many peace-time roads up and in the mountains before, but when the war came the Italians commenced an extraordinary network of military roads leading up into all kinds of queer places, up which they got troops and guns and transport, generally in great numbers. Indeed, the war in this theatre has brought out very many new things in this respect, and mountain warfare stands in a class by itself. To us of the mountaineering persuasion it is exciting and attractive and interesting enough simply to climb and see. But when on the lower slopes or opposite crags are gentlemen, also climbers, taking pot shots at you with a rifle or spattering the rocks by you with machine gun bullets or hurling percussion shells near you, climbing technique and enthusiasm are not what they were in peace time—the "sportsman's paradise" and "climbing for pleasure" fade out of the picture. But the Alpini are truly wonderful, the Italians have many very fine regiments of them, and I never fail to stop and admire them as they march past with their slow, steady tread even on level, smooth roads—packs piled high with various gear, including crampons and extra hobnailed boots, with occasional ropes and always with an alpenstock, which, with the rifle as well, is not easy to manage. Their transport, too, all pack mules, is very interesting, as they carry everything on them, including machine and mountain (screw) guns. I know! Because I had an exciting, almost tragic, experience one day when I was coming along a narrow road in my fine, big "Lancia" limousine. The regiment was marching on each side of the road, as is their custom, leaving the centre open for vehicles. As I got in amongst them and came to the transport, the trouble began, for two refractory mules carrying machine guns turned their backs scornfully as

the car came up and between them their loads hit the side of the car in four places, breaking the glass close to my face in a hundred pieces.

It is truly extraordinary what these Alpini can accomplish when out on their native fighting ground and when, as I have been shown on several occasions, one sees the places where they have made some clever attacks, one is silent in admiration of their mountaineering skill applied to present day warfare. I have in mind one cliff on the edge of a deep valley where in January a regiment of Alpini, as a part of a brilliant attack by the Italians, climbed up about 300 feet in the night, noiselessly, to get into attacking position, and then in the morning did another 200 feet and surprised the Austrian garrison in the trenches on top, killing or taking prisoner the whole lot. They got away with 400 prisoners, bringing them down another way which had been opened up by the general advance.

I must again allude to the transport which any one who is a mountaineer must realize is one of the great difficulties of mountain warfare. The roads I have spoken of, but as I sit in my office room in a small house near the —— River and look up to "the hills," I can see numberless fine, thin yellow and white streaks threading and zigzagging upwards in all directions — on the lower slopes the loops are longer and high up are shorter—and if one's eyes are keen one can see even at the top slow moving wagons and faster moving motor lorries going up and down and it does look so busy. Through the glass all kind of life comes into the picture and if one were up amongst it, as I am every few days in a light, high-powered, short wheel-base "Fiat" car, he enters into the real excitement of hanging on to a narrow ledge cut out of the mountain side with just enough room to let two cars pass—but I could write on for hours about these mountain roads and what is to be seen upon them. Then, the other transport even more wonderful still!

The "Teleferica"—the cableway, as we would call it in Canada. It is developed here for warfare and is the means by which tons and tons of stuff are sent up daily to British troops alone, to say nothing of the many miles of front thus served for the Italian troops. Supplies of food, forage, ammunition, construction material, all are to be seen gliding slowly upward in their little iron boxes, across the valleys, up the rock faces, through forests and up the scree slopes to the landing platforms high up, oftentimes in the clouds. These are the things you read about and see pictures of and, I suppose, wonder, as I did, if they are not toys rather than real, practical, every-day machines. Not a bit of it! And your admiration and confidence in them is complete after you ride in one yourself, being sure to hang on tight and not get giddy when you look down into the deep valleys.

Now you are to come with me high up into the snow —where I was, for instance, on April 25th, on the great Mt. Grappa, which is one of the huge bastions of the Italian line in the mountains. It is between the Piave and the Brenta, and it was around this that much of the anxious fighting took place in December. It is not high as mountains go—6,500 feet—but with its surrounding hills rises straight up from the plain and is a landmark for many, many miles, even from the sea on clear days. I need not tell you of the long motor journey starting at daylight, nor of the long but interesting motor climb up loop after loop on the mountain roads, passing motor convoys, pack transport, wagons, marching troops and motor cyclists. There were various "soft spots" we had to pass where the enemy was in the habit of shelling with both shell and gas, mostly in valleys, etc., where gas would hang low and where, for obvious reasons, trenches and dug outs, etc., were well up on the hill sides. After some hours we got up and well into the snow, where we couldn't get the motor any further, so we left it and went on foot. It was a bright, clear day, a rare day after the

month of rain and snow, and the sun beat down on us very hotly, not at all unpleasantly though, except for our steel helmets. It seemed so good to be out on a snow slope, all white and unbroken and with a bright sun—all wore goggles, of course. I said unbroken—no—for, curling around and stretching across and waving in grotesque patterns, were rows of trenches and wire, black in shadow and outlined against the glistening snow, and here and there were groups of dark—dugouts where the garrison lived, one could see the tiny forms moving to and fro—and occasionally one could see, too, groups of splotches on the white where shells had burst since the last snow. And far above was the summit with a gray stone cabin and a solitary flag pole and the brave green, red and white flag fluttering from it—a peace-time hut still untouched by war. So it was, climbing on "Father Grappa" as the Italians call him. But we were on the rear side of his slopes and we had still to go on and get around to the front, where the real panorama was to be seen—the enemy's lines. I must not describe the top or the routes we took, or the trenches or the other defence works, wonderful work of these busy Italians; I shall have to leave that for *après la guerre*, or the camp fireside—but as an engineer through whose eyes I was more likely to see than as a soldier, I was amazed with the ingenuity and boldness of the work and especially with the great speed with which it had been done. They were still working at underground work in very hard rock and it made me feel quite at home—as at Niagara Falls.

May 5th.

On Thursday I had another "ascent"—this time more of a climb—and far from being in a motor car and snow, it was a real climb and very hot. It was in entirely another part of the line, in fact quite close to and connected to our sector, and is a peak I often look at from afar. We, a Field Survey officer and I, went up the

valley in a car and got out at its foot, sending the car away around to the top by a circuitous route to be met in the afternoon. The sensations of starting on a climb were all present—even though by that time it was 10 a.m.—and as we started slowly upward on the lower slopes past new and old reserve trenches and wire and gun emplacements and camouflaged roads and mule tracks, I wondered how all these new Alpine things would look out on our native heath in the Rockies! Indeed, I tried to transplant the picture and sought for some place at home where the scene might fit—I think, perhaps, Banff, if the latter's valley were narrower and the mountains higher and steeper and the woods and trees were replaced by fields and vineyards and white roads and farmsteads. The villages—one a large town—which I cannot name, look Italian, of course, with white houses and red roofs and the usual campaniles all gleaming hot in the sun. I wonder when Banff, for instance, will take on such an old-world, dignified appearance! But the river itself was just the same; the —— was the Bow, only smaller at this season, with its winding course, its white gravelly bed and its green and white water glittering in the sun. At first, when high above it, I imagined, and then, when all was quiet, I did realize that I could hear it rippling far away. You who know the mountains know the sound as it floats up from a still valley on a gentle breeze.

I spoke a moment ago of the roads far down the valley. Yes, they were the same as at home—all roads look much the same in the mountains from a height, with their twists and hairpin loops—but these had long rows of lorries and transport betimes—military columns—and one could see the miles of screening hung in the trees and on posts and wire, made of reed matting, brown and rusty and waving in the wind.

Now to the hillside of rock and scree and earth and grass and trees between in sheltered places. I do wish I could describe the mountain side with its trenches, its

wire and defences and gunpits, the huts of various vintages, including the peace-time cowherd's stone shelter, and various types of rock and wood and earth and the winding paths cut to and through them all, some on slopes in sidehill, some on ledges, some in steps on cliffs and with bridges all built by the splendid Alpini who, with their simple camp kit and their mules, inhabit these parts. What wonderful fellows they are! Always cheerful, singing, busy and alert. Strong, husky, muscular fellows, dressed in the usual Italian grey, with knickerbockers a bit fuller in the knee and with grey-blue puttees and heavy, hobnailed boots—and side nails—with Alpini felt hat turned up at the back and down at the front, with a jaunty eagle's feather sticking saucily out behind—these are the mountain soldiers of Italy, and I would back them against any troops in the world in their own mountains. Their collar badge is green; all brigades of the Italian Army wear distinctive cloth colours on the front side of their collars—some are quite variegated and brilliant, but the steady old Alpini, exclusive and quieter than their more voluble brothers of the plain, wear the simple green of their native hills. I suppose we think our own packers and our own packsaddles and the diamond hitch are the only ones in the world. Not a bit of it. Let some of our Jack Otto's and Curly Phillips' come over here and get a few lessons from the Alpini! Let them try packing two barrels of water and six flasks of chianti (glass surrounded with straw covering) or a machine gun with tripod and ammunition.

As we two went up and up, loops, slopes and steps, past hutments, trenches, wire, machine gun emplacements, screens, tunnels and dugouts in the rock, I realized the more what three years of war meant to the Italians. I realized how much this hard work in these picturesque mountains will help in the future after the war. I cannot help but think that all the labour and money which they have spent on their military roads, paths, tunnels and

other works will all come back in some form when this becomes one of the great show places of the world war, when all the world which loves Italy, anyway for itself, will come here to see what they have to show in their beautiful scenery and in their unique labours in the defence of their country in this great struggle. So, who knows but the A.C.C. may have a camp hereabouts some day or, may be, have an Italian section! No one would welcome such more than the Italians themselves— the "Club Alpino Italiano" best of all.

And now I want to speak of an encounter I had two months ago with the Milan Section, whilst there for an afternoon on my way home from leave in England. I was walking through the "Galleria," just beside the Cathedral, a huge arcade, and glancing up to upper windows saw on them "Club Alpino Italiano, Seze (Section) Milano." So I went up to find the Secretary and to my great delight he was there and spoke English excellently—Enrico Ghisi (Cavaliere of the Crown of Italy); he is also an ex-president, but is now helping during the war in his own city. He was truly delightful and appeared so pleased to have me call, and after I had told him who I was and what we are in Canada he was most demonstrative, welcoming me as a brother. I told him of our mountains and what we are doing and how, like them here, though thousands of miles away from the war, we are also sending things to our members who are at the front. He showed me stacks of parcels of books and other articles they were sending out for Easter and surprised me by saying that of a total membership of about 1,500 in the *Section*, over half were serving with the troops, nearly all at the front, and, of course, nearly all were Alpini. It was a very fine record and indicative of the Spirit of Italy. I gave him some similar statistics of our own Club, and what seemed to strike him was the great distance we are away from the war, and what a great thing the British Empire is! In the course of the

talk he kept showing me various photographs of their mountains and climbs and descriptions of meets, huts, routes, etc., his various assistants, mostly ladies, being very assiduous in their attentions to the "Inglese" from Canada, and in the end he gathered together a great pile of booklets, reports, photographs and sketches for me to take away with me. (These I have already sent over to you by mail in two packets.*) When leaving I extracted a promise from him that he would come to Canada soon after the war and would arrange to be there in the summer, so that he could come with us to the Club Camp. Though an old man with white hair, he is full of energy and vigour, and his eyes glistened with excitement when I told him how we would like to entertain him—and, indeed, any of our good Italian Alpine friends—in our grand mountains. The head office of the Italian Club is at Turin. I presume we already send them our Journal, but if not, I think it would be much appreciated.**

May 19th, Whit Sunday.

This letter is getting into a great length, I fear, but I cannot help adding another weekly instalment to the serial story.

On Friday I was up still another mountain—the monarch of all along the front, Pasubio, alt. 7,400 feet—almost straight north of Verona. It is a magnificent massif, and though not a snow mountain, still had deep snow and will continue to have for some time to come. It is a huge mountain and stands like a buttress amongst all the others, not only as mountains but as a defence, and like "Father Grappa," is one of the centres around which the war here revolves. One can see it for many miles anywhere from the plain, as it bulks so large. Of course, as the plain is only two or three hundred feet above the sea it seems to stand right out of it. We went

*Only one has been received.

**The Journal is regularly sent to the C.A.I. at Turin.

in a car up the valley which runs in westward from Schio, and I wish I could tell you of the interesting things I saw in this beautiful valley, all bright green in its spring freshness. Its tactical and strategic values are such, however, that I must not speak in detail. However, from the mountaineer's point of view, it has all the charm of great, high, wooded mountains, flanking a narrow valley, with its cliffs and its dark ravines and the tiny villages and farmsteads tucked closely in at the bottom. The white winding road, the highway over the pass to Rovereto in Austria—still Austria—ever curving and changing, brought new scenes with every minute. In peace time the quiet country folk herded their cattle and cut their hay, but now, with them still there, the whole valley is alive with the grey-uniformed sons of Italy at all their war-time tasks. Some day I hope to go over this pass in peace time and to remember its war-time pictures. Up near the top we began to find Alpine meadows, all bright with flowers, and after we left the car for an hour's climb over the rocks and meadows at the summit—into Austria, now Italian—I was full of joy at again being in such an enchanted spot as this bright meadow on the mountain side at the head of the pass—it reminded me much of Moose Pass, near Mt. Robson, if one could forget the many little white villages dotted down the valley looking towards the Austrian lines. But you see again one cannot get away from the war, even in these beautiful places; as I cast my eyes upwards past Pasubio I could see the great crag of Mt. Corno where, a few days ago, the Italian Alpini made their historic attack. Of my trip—our trip, there were four of us, including the Italian officer—up Mt. Pasubio I cannot now talk, but that will have to be left. Suffice that after another hour of the Fiat car on the steepest and narrowest new mountain hairpin road I have yet been on, we left it at the real end of the road at a huge snow cornice fifteen feet high still melting in the spring sun.

Here we ate our lunch really before our climb, which was unfortunate as you may know.

Our two hours' climb and tramp in snow and scree and along paths and mule tracks hewn out of the mountain side was not easy, and unfortunately we were in the clouds so that we did not have the incentive that goes with the view; it seemed like old times to be traversing—on a four-foot mule path—a 45 degree snow slope which faded away in the cloud down below. I wish I could tell you of the wonder I felt at how these wonderful Italians have hoisted their guns, heavy and light, up these great mountains—incredible as it seemed to me, and as I saw the huge monsters at various places in these mountains high up, very high, I could not but salute them.

The snow at the top, even on the 17th of May, was incredible, and we were still walking through hundreds of yards of snowsheds beneath many feet of snow, and on the way down it was such fun to glissade on the narrow snow paths cut in the deep snow. I suppose I had five or six hundred feet of it; how they get up I hardly know—oh, yes, I have already told you of the "Teleferica" or wire cableway that makes mountain climbing easy! So we came down through thousands of yards of paths and hedges and galleries and tunnels of which again I cannot speak, so that by six o'clock we were again down at the car, which we had sent round to the other side in the interval. During this six hours we had climbed 2,500 feet and had descended about 4,000.

So here, after all these long trips up and down and after taking you up the valleys from the plain and visiting the mountain villages and the passes and the alpine meadows, and after struggling upon roads and paths and snow and out on the top, I must leave you to try to picture it all set in our own beloved Canadian Rockies.

Yours ever,

C. H. Mitchell.

MOUNTAINEERING SECTION

THE ASCENT OF MOUNT MOLOCH

By J. W. A. Hickson

After an interval of two years, an opportunity presented itself of again trying a contest with a five-times attempted peak on the west side of the North Fork of the Illecillewaet, and after some preliminary and, for myself, preparatory scrambles on certain rock pinnacles near Lake Louise and a re-ascent of Pinnacle Mountain from Moraine Lake side, the Swiss guide, Edward Feuz and I met at Glacier towards the end of last July to make arrangements for sending several horses by train to Albert Canyon in order to carry tents and a supply of food up to the camping ground. Not being able to find another amateur to join the expedition, and knowing the climb to be one for which a party of three persons is desirable, I secured the services of a second professional, Ernest Feuz, who, in addition to being a most capable guide, is a capital companion on arduous climbs.

While at Lake Louise conditions seemed to be auspicious for our enterprise. Bright sunshine had prevailed for several weeks, and the rock peaks like Mt. Moloch were unusually free of snow and ice. But scarcely were we established at Glacier before we had a taste of the resources of the Selkirks in the matter of weather. On July 28th the thermometer went down to 33 deg. F. at mid-day, a series of electric and really magnificent storms followed, snow fell heavily even on the lower part of the Illecillewaet Glacier; and, early the following morning, it covered the ground around the

Hotel. On the 30th, there was still no prospect of our making a move, and we realized that most unfavourable climbing conditions would now obtain for a week at least on the higher peaks. Twenty-four hours later, however, Edward Feuz, ever eager and impatient when a mountaineering excursion is on the cards, and a packer, supplied by Messrs. Brewster, left with impedimenta and horses for Albert Canyon, whither they were followed by Ernest and myself by the early train on the first of August. We found their tent pitched a little north of the village, which appeared to be more alive than when we saw it in 1915, and aroused them about four o'clock to assist in the preparation of breakfast.

We started at seven up the trail, or Waverley Road as it is called by Mr. Wallace, which, on the whole, was in good condition, and three and a half hours later reached Klondyke Bridge and Camp, some ten miles from Albert Canyon. The day had developed magnificently, and it was delightfully warm; the sole drawback being mosquitoes, which were terribly active during periods of rest. About a mile and a half further on, a huge snow-slide covered the trail and caused the horses some difficulty and the party a loss of time. The "Farms" were reached a little after 3 p.m., and here we unpacked and decided to stay for the night. The flies were almost unbearable, sand-flies being now added to mosquitoes, and even interfered with the enjoyment of the splendid supper prepared by Lagacé, who proved himself throughout the trip to be a first-rate cook and an agreeable man.

Much time was lost next morning through the horses, notwithstanding they were hobbled, having made their way down the trail almost to the snow-slide, and there was a similar annoying experience later in the day through the escape of Lagacé's steed, temporarily left by its master, while we were holding council as to the best place to descend to the bed of the North Fork for the

purpose of crossing it. As a matter of fact, two crossings had to be effected, firstly of the main stream and then of its tributary, Moloch Creek, both of which were safely carried through by each of the pedestrians taking his turn on the horse behind the packer. Without a horse, I do not think that we could have crossed the North Fork. A suitable camping ground was located in a meadow about half an hour from and below the main trail, with a full view of the amphitheatre of peaks and glacier which form the end of the tributary valley, on the left of which lay our objective. Fortunately we had our tents fixed and everything made snug before a heavy rain storm began, which kept up till we went to bed. The weather was by no means settled in our favour.

Next morning most of the mist had cleared out of the valley, but the sky was heavy and threatening and the apex of Mt. Moloch was covered with cloud. The guides and myself explored the ground a bit by going up the valley on the right side of the stream, approximately over the route we had taken two years previously. The view of Mt. Moloch afforded on the way was very forbidding, for the steep summit ridge was covered with fresh snow and appeared in places badly corniced.

Notwithstanding the opinions of Prof. Sissons and Mr. Wallace as to the feasibility of the northwest and the impracticability of the east and south routes, we were determined before leaving the valley to try the latter again. To this end it appeared highly desirable that we should make a camp on the left side of Moloch Creek and as near to the head of the stream as possible, since, as we had before recognized, the inaccessibility of the mountain was one of the chief risks in an attack. Accordingly, the guides spent the latter part of Friday, August 3rd, in prospecting, and returned to camp late in the evening to report that a way up the valley was quite feasible for horses, for which they had cut a trail in places where the alders were obstructive. They had also

felled a large tree, which enabled pedestrians to cross the stream, about fifteen minutes above our camp. It was not until the following day that I realized how much they had done to make the transportation of tents and supplies a success. In glorious weather we moved our camp some two miles nearer our objective, but had to pitch our tents in none too good a place almost on the edge of the stream, with the ice-fall which forms the tongue of the eastern glacier of Moloch away above us on the left. Here we were about a quarter of a mile lower down the valley than where we had finally camped in 1915 on the opposite side of the creek. From this position we had a very clear view of the summit ridge of the mountain, which we knew looked misleadingly short from below. What we saw of it through a strong glass confirmed our previous conviction that it was in bad condition; and there was one place, consisting of smooth and precipitous slabs, which looked insurmountable by direct attack; so that we could only hope it would be possible to somehow circumvent it. Fortunately, the weather seemed at last to be settled, and we decided to try our luck the following day. And now we did something which is not easy to justify and which almost lost us our peak: We decided to have a *look* at Professor Sissons' route!

Undoubtedly, the main determining factors for this change of plan were the unfavorable state of the mountain and our recollection of the nature of the rocks connecting its two peaks, the traversing of which we knew would not be without danger even when in the best of condition. The length of time a traverse of this ridge would require, which was ultimately over-estimated, was also taken into consideration; and then there was the strong and repeated assertion of Prof. Sissons and companions who had explored the mountain much more carefully than we had, that the west route was by far the most promising one. One of the guides and I knew nothing of this route; the

other had accompanied Profs. Holway and Sissons in 1913 when their attack petered out owing to bad weather. But he had had no opportunity of making any notes of the prospects it afforded. Nevertheless, he was for sticking to our original plan; but in this he was unwisely overborne.

Accordingly, on Sunday, August 5th, we got away from camp by the aid of moonlight at 3.15 a.m., crossed a glacial torrent, which descended on the left from the ice-fall, by means of a convenient snow-bridge, and made our way up the lower glacier at the head of the valley. We crossed this diagonally to the right without difficulty and, after leaving it, moved in a westerly direction over grassy slopes and then over scree and moraine until, a few minutes before six o'clock, we came to the ice and snow on the north side of Moloch. On the upper snowfield we roped and, turning to the left and skirting the "candle extinguisher" in the centre of the amphitheatre, reached some out-jutting rocks on which we rested for a slight repast. It was now 7 o'clock and we were not far below the crest of the snowfield leading to the peak, named by Professor Sissons and party, Mt. Baal. It was a splendid day with perfect temperature, one of those on which it is a joy to be merely passively alive, and to feel that one is in complete harmony with Nature by being just a bit of it. A deep blue enamel-like sky of Italian loveliness bounded the top of the snow line. The huge irregular snow-covered mass of Mt. Holway was a striking feature of the fascinating scene, both grand and soothing.

The sole disturbing feature of the environment was the appearance of Mt. Moloch itself. As we advanced towards Baal, its northwesterly face became more and more difficult looking. The guides appeared to be very disappointed at the prospect, and my own hopes, which had been fairly buoyant, began to ebb. We had now to face and decide the question whether we should ascend the

snow peak—Baal—or not, and thence attempt to traverse to the massif of Moloch. A weighing of the pros and cons led to a state of uncertain deliberation. In addition to the difficulty of effecting a transition from the ridge of Baal to the northwesterly wall of Moloch, which our glasses did not indicate was feasible without considerable risks (a direct ascent of the cliffs of the mountain being plainly impracticable) this connecting arête itself took on a more and more problematic aspect as we pushed up the snow towards its northern wall. We got fairly close to it and could, by the aid of our glasses, see clearly that besides being extremely fine, it was cut in places in a way which, while rendering a descent of it to Moloch precarious, might make a return over it impossible. One might reach the cliffs of Moloch and find the work of *pedem referre* to be an impossible business. An attempt to descend its side would be attractive only to a would-be suicide. After an hour of searching with glasses and further deliberation, and taking into account the fact that an arduous and unsuccessful attack might make us too tired for attempting anything important on the following day, we decided to turn back. The guides had no two opinions on the matter; they regarded the route as probably impossible and, even if possible, fraught with too many risks to be reasonable; and we were all agreed that, compared with what we knew of the east and south routes in 1915, it was far more questionable and considerably more dangerous. We were off the snow by 9.30, came slowly down to the lower glacier and reached camp by one o'clock, determined to make another assault on the morrow. But man plans and Nature decides sometimes differently.

That afternoon the weather suddenly changed, and we had a further prolonged experience of the moistening capacity of the Selkirks. During Monday, Tuesday and Wednesday, August 6th, 7th and 8th, we remained in camp more or less inactive, and at times a bit depressed,

when our thoughts turned to our dwindling provisions or which depended the possibility of not achieving our aim. The guides threw out various shafts of criticism over changes of plans and following amateurs! However, though considerably bored, I was not greatly disturbed, for I had determined, if necessary, to dispatch Lagacé to Albert Canyon, where an excellent general store would have afforded the means of replenishing our stock of food, and meant this time "to stick it out" to the last. Fortunately we were saved "taking measures" through the weather clearing on the evening of the 8th and remaining fairly steady on the 9th; and, although we realized that the mountains were in anything but good climbing condition, we made all the necessary preparations for having another "go" at our peak on the following day.

On the morning of the 10th we got away at 3 a.m., a clear bright moon again affording us sufficient light to see our way. It was unusually warm for so early in the day. After crossing the glacial torrent on the left we kept upwards and reached a tedious moraine, on which we ascended and then descended to a snow-slide connected with the upper snow-field and glacier which we were afterwards to reach by a circuitous route. Then came the stiff, steep, rocky bluffs covered with grass, scrub and alders, by means of which you have to pull yourself up; a bit which we found previously very disagreeable and which was once again to prove a stumbling block in our venture. On the upper grassy slopes above this bluff, over 1,000 feet above our camp, we rested at 4.20 for a few minutes, and observed through our field glasses a large number of goats browsing on the opposite slopes of the valley. From here, half an hour's going brought us to the side of the glacier which sweeps down from the Y formed by the east and south ridges of Moloch, and the tongue of which ends in the ice-fall already referred to. Could we have ascended by the latter, our route would

undoubtedly have been shorter and easier; but deep crevasses and unsteadily poised blocks of ice had warned us away.

After roping we made good time up the ice-field, for it was much less crevassed than at the time of our former visit, and this fact allowed us to take a more direct route. Its upper part was in capital condition for our purposes; and a few minutes after six o'clock found us at our previous breakfasting place, under the southeast face of Moloch, two hours ahead of our former time. This was important and encouraging. Having eaten a little food, we made towards the left (instead of as before to the right) in order to reach the southern arête. Recent snow-falls helped us considerably, and we gained the lowest rocks of the dirty brown looking wall without any difficulty, except that a careful lookout had to be kept for falling stones. But here everything changed, and from now onwards there was nothing easy.

The place where we struck the southerly ridge was higher up, *i.e.*, closer to the main massif of Moloch than where we had descended in 1915, and I think steeper. It had been unpleasant work coming down, but it was much harder to ascend. We had calculated to reach the col in an hour and a half; we were soon disillusioned about the character of the rock and rate of advance. The face of the wall was not only much smoother than it had looked from below, but it was not of a firm character which would have enabled us to use our rope-soled shoes. The slight handholds came away easily, and there was much filling in by fine and loose gravel. The places where the rope could be belayed were very few. Above us on the ridge frowned an impending cornice which received, unimpeded, the rays of the sun. A certain amount of moisture on the rocks increased the unpleasantness and added to the feeling of insecurity. This was, indeed, a miserable bit of climbing. Most of the way up only one of the party moved at a time, and it was 9 o'clock before

Photo, J. W. A. Hickson

APPROACHING THE HEAD OF MOLOCH VALLEY

The Candle Extinguisher in Centre of Snowfield

Photo, Ed. Feuz

SUMMIT RIDGE OF MT. MOLOCH

1. The Unscalable Slabs. 2. The Perpendicular Rock Wall

we reached the top of the col which led to the main body of the mountain. Without delay we proceeded with the ascent towards the northeast, soon leaving the arête by making a slight traverse to the left and climbing up over steep and, in places, sharply broken and smooth worn rocks, much covered with loose stones and shale which seemed to form part of them, but which on contact treacherously fell away. On the descent this part was especially tricky. Some few hundred feet below the first peak we came out again on to the main south arête, which we followed to the beginning of the summit ridge and our resting place of 1915. About 100 feet below this we noticed the point at which we had joined our present route when in that year we had tried the peak from the eastern side.

The time gained by the change of route was less than one hour; but, having made an earlier start, we were on the summit ridge over two hours ahead of the time of our previous attempt. Although not easier, our former route is the safer.

The appearance of the long ridge—probably about a half a mile in length—over which we had to work our way to the summit was not encouraging. Recent snow covered its sharpest parts, which we had been prepared to "horse," and an uncertain cornice had to be crossed at a point where the rock slightly overhung on the northeast side. Nearer the top some smooth slabs, to which reference has already been made, were plainly impossible by direct attack. To use our rope-shoes, which we had always looked forward to doing and which would have undoubtedly reduced the risk and difficulty of the rocks, was out of the question. I could see, besides hearing, that my companions were very unfavorably impressed by the possibilities. After half an hour's rest and a little refreshment, which we were too excited to enjoy, it was decided to proceed.

The picture of the summit ridge suggests that an

advance over it must necessarily be slow, and that unusual care will be demanded except at its curve and near the top. The rounded promontory of rock just before the first square cut-out in the arête is one of several places requiring steadiness and alertness in climbing, and skill in using the rope to get down comfortably on the further side. On such a bit of rock, devoid of decent foot-holds, nailed boots are of little use. Immediately thereafter, we reached that part of the ridge on which the snow lay about a foot deep on its sharply sloping southwestern side. Fortunately it was fairly compact, and Ernest who was leading declared it to be quite safe. The rope we were using was not sufficiently long, however, to enable him to cross it before Edward and I stepped on it. Remembering the maxim, good climbing is safe climbing, I determined we should not all trust ourselves in this coating of snow simultaneously; so a second rope was brought out, and tied to the other, and this gave the leader a length sufficient to let him reach some clean firm rock before the third member of the party stepped on to the snow. After this the going was fairly easy for some fifteen minutes, although a steady head and firm understanding were constantly indispensable, since the top of the ridge which one had to follow was in many places not wider than one's boot. Even at the easiest parts, and there were a few spots very simple, a slip on the part of one of the party would have been serious, if not disastrous; because, all along until we reached the very last stage of the ridge, there is a clear drop of several thousand feet on the right, on which side the ridge sometimes slightly overhangs. Fortunately I found both my head and my feet in good shape, and was spared the indignity of having to crawl! But sometimes it was helpful to sling one's right arm around the top-edge of the arête, while friction of one's body, not to the benefit of one's clothing, against the extremely steep but rough wall of the southwest side added further sup-

port and confidence. Throughout this traverse it was possible to enjoy the thrill which comes over one from the thought of treading and grasping rocks which no human feet or hands had touched before.

At a place more than half way to the summit a sharp descent is necessitated by a large dent in the ridge. This was much easier than it appeared and, on ascending on the further side, we were brought up to the smooth slabs which from a greater distance looked unscalable (see picture at I). And so they were; but, to our great relief, we saw a way around them to the left by a traverse which took us over a nasty and exposed corner and then back again to the main ridge. On this there now remained only one more difficult bit, of which we ought to have had a photograph. Unfortunately, to my great annoyance, the camera was left behind, with other impedimenta on the lower peak. The place consists of an almost perpendicular wall about 25 feet high (shown in the picture at 2), in which some footholds were made by clearing away loose rocks and above which there is a sharp outjutting stone that proved most suitable for arranging the rope. On the way back this arrangement rendered us independent of hand-holds, which were remarkable for their absence. Here, Ernest presented a pretty picture of a climber gradually working his way up a difficult and dangerous bit, owing to the sharp drops on either side, with cool deliberation and neatness. Having gained the top of the wall, he let down a second rope which the amateur used greatly to the saving of his fingers and the preservation of his morale. Once over this place all the difficulties of ascent were past. The summit, remarkable for its huge isolated and upright block of red granite, which below had presented the appearance of a stone-man, was now plainly visible, and was clear of snow. Ten minutes of easy walking brought us to it at 1.10 p.m., after almost ten hours of steady going from camp.

The view or views that were spread before us makes

me modify, if not retract, the rather depreciatory estimate of the scenery expressed two years ago, which was due either to the mood of the writer or to the character of the day and the less favorable distribution of light and shade. Owing to the clearness of the air and the isolated position of Moloch, I have never had a more extensive and, so far as vastness goes, a finer panoramic view in the Rockies or Selkirks. Not to mention peaks in the immediate neighborhood, Sir Sanford, Bryce, Lyell, Columbia, the Laggan group, the Goodsirs, Sir Donald and the Dawson group were plainly visible. The light was very soft and beautiful. On the southwest side of our peak, an unusually deep valley, I should say at least six thousand feet below where we stood, was terminated by a wonderful ice-fall, the glacier of which united with another of the same symmetrical shape further to the south side to form a very extensive snow-field. The scene was absorbingly satisfactory and exhilarating, and the bare half hour, which was all we were allowed on the top, passed like a few minutes. The desire to remain longer was curbed by the knowledge of our long way back to camp and by Edward Feuz' remarks about a change of weather, signs of which had not escaped my attention. Having, therefore, left the usual marks of our presence on a first ascent, we put on the rope again and turned our faces to the southwest.*

To make what is already a long story shorter than it might be, we reached what I still venture to call the lower peak again at 3 o'clock, thus reducing our time of re-passage over the summit ridge by an hour. It would have been still shorter had not a jamming of the rope at

*From the summit; what we saw of the northwestern route went to strengthen our previous opinion of the poor prospects which it holds out. Even if it be possible to reach the massif of Moloch from Baal col by a traverse to the right into a couloir shown in the right hand picture of p. 54, vol. VII., A.C.C. Journal, it is doubtful that this would solve the problem of an ascent, for it is uncertain how far one could proceed up this couloir, or whether one could effect an exit from it. The mountain is deeply cleft nearer the summit, and the ridge looked extremely perpendicular, if not undercut in several places; and when I suggested to the guides that we might descend on this side and thus complete our traverse of the peak they said: "Out of the question."

the rock wall made it necessary for one of the guides to re-climb it and adjust a sling.

After a rest of half an hour, we retraced our route over the rough and ledgeless rocks down to the southern col, where we arrived about 5 p.m. Here unfortunately we lost half an hour, which made all the difference later on, through conceiving the plan of following this ridge and attempting to reach the snow-field at a place below where we had left it in the morning. Soon perceiving, however, that we might get into worse difficulty than that of having to descend over the nasty eroded and gravelly rocks of the route of ascent, we abandoned the attempt. The descent of the wall was disagreeable work, and on the upper slushy snow, safety required us to go down for a considerable way backward, a tedious and fatiguing exercise after a long climb. The sky was now closing in with heavy clouds and we were really anxious to make as fast time as possible. But although we hurried where the snow was safer, it was 7 p.m. before we reached the lower snow-field in howling wind and driving rain.

We hurried down the glacier, in waning daylight, in the hope of making the valley before nightfall; but alas! reached the rocky bluffs below the upper moraine, too late to find the opening through the alders which alone enables the descent to be made with safety. For, although only a little after 8 o'clock, it was, owing to the weather, practically dark and, after repeated groupings to strike the right place, we were obliged to abandon the attempt, the only alternative to which was bivouacking in the wet grass completely unprotected from torrential rain. How often had we not seen in our climbs a nice cave or undercut rock which would have been a regular haven under such circumstances! Even now, about twenty minutes below us we knew of such a place, but there was no star or beacon to point the way. There was no dispensation for *our* benefit; but only pitiless rain and mist and wet ground. Our clothes and boots were full of

water and, after steaming with perspiration, it was exceedingly trying to feel the enveloping cold. I wondered how we should get through the night, since sleep would be practically impossible. By peering about with his lantern, Edward Feuz perceived an old log and a few pieces of timber and, after much effort, managed to start a feeble fire, which weak and fitful as it was, doubtless made a great difference during the earlier part of our watch. But the amount of fuel was limited, and the fire could not keep three of us warm. It enabled us, however, to warm and dry our feet. Much as we required it, we could not enjoy food, and for a couple of hours around midnight I felt quite shaky and unwell. But it is astonishing what the healthy human organism can stand. Predictions were made of pneumonia or at least severe colds, and were all falsified. *Forsan et haec olim meminisse juvabit.* One of the party understood now the significance of the Scriptural allusion to those "that wait for the morning." At last it came, but later than it should have, owing to the heavy weather and the mist which filled the valley. After eight hours of enforced rest and miserable existence, we started wearily down and without any further mishap reached camp at 5.40 o'clock, where a most comprehensive breakfast was immediately attended to; then wet clothes were thrown aside and a period of unconsciousness followed in the sleep-bags.

The clouds lifted during the day, much drying went on and preparations were made for an early start on the following day to Albert Canyon. Our provisions had lasted well, but were now fairly low. A strenuous day's walking brought us to the railway on the evening of the 12th, where Edward and I left Lagacé and Ernest to look after tents and horses, and took the night train to Glacier. We arrived there about 3 a.m. to enjoy a splendid moonlight effect on Sir Donald ridge.

Our experiences on the two attempts on Mt. Moloch, as well as one on the Goodsirs in 1915, illustrate forcibly

one of the great disadvantages of mountaineering in the Canadian Rockies: the lack of shelters or huts near the mountains which could serve as suitable starting points for climbers and so reduce the length of the climbs. It may be said that this is what you must expect if you wish to climb virgin peaks; you must pay something for such privilege. In a very literal sense one pays both with person and purse. Most of the best climbs are at present too long and fatiguing for those over a certain age, and they are too expensive for the great majority. The remedy for such conditions, which undoubtedly militate against mountaineering in our wonderful Rockies, is a chain of huts, placed at the most important climbing centres, and not below timber line. One can hardly expect to find a hut near Mt. Moloch, but in the Lake Louise district and near the Dawson group, *e.g.*, it is surely not hoping for too much that shelters placed well up to or above timber line may soon be forthcoming.

The Club has done much for the novice; it should now, in its own interests, do something for the mountaineer. This is necessary in order to enlarge the membership, draw mountaineers from other parts of the world, and sustain the interest of older climbers in our wonderfully varied and fascinating alpine region.*

Note.—Dr. Hickson's advice with regard to the construction of huts is sound and, I think it may be said, that the Alpine Club of Canada as a body is fully in accord with him. All that appears to be needed is the financial backing.—Editor.

*In his very readable article in Rod and Gun in Canada for March, 1913, Mr. P. A. W. Wallace speaks of Prof. Sissons with Mr. Jack Wright having in July, 1912, made an attempt to climb the south face (p. 1056), while in his article in the A.C.C. Journal, vol. VII., p. 51, he writes: "Prof. Sissons in 1912 had twice assaulted the shoulder unsuccessfully by way of the north-east ridge. Across the stupendous gulf of the Y, the southeast ridge presented too many points of similarity with its mate to inspire confidence." My surmise that Prof. Sissons was never on the south or southeast ridge has recently been confirmed in a conversation with him; and, inasmuch, as one of his attempts in 1912 was little more than a prospecting trip, it would, I think, be more correct to say that up to the end of 1915, there had been five attempts made on this peak. There is no evidence that any party was on the south ridge of Moloch before we descended by it in 1915. In the above article, I have designated the two ridges, which unite with the main massif to form the Y, as simply eastern and southern.

MOUNT LOUIS*

By Val. A. Fynn

Early in July, 1916, Mr. Watt and myself rode to Edith Pass and, leaving our horses, walked north to investigate Mount Louis, which we understood had not yet been climbed. It was my very first trip that season, and Mr. Watt was also quite soft; our entire lack of condition made itself felt even before we reached the foot of the peak.

A somewhat rising traverse over a number of ribs brought us into full view of the mountain which is separated from the north peak of Mt. Edith by a gorge which runs down to Forty Mile Creek. The lower part of the south face is extremely steep, appears to overhang in places, and is very smooth; its upper part is more broken and is seamed by a number of deep, nearly parallel couloirs which reach almost half way down the face before merging into it. As these couloirs approach the sky line they become steeper and narrow down to regular chimneys. The upper part of the east face is almost vertical and very slabby. Its lower part looks quite accessible and is cut by a deep and wide couloir, the upper part of which turns north to lose itself near the highest shoulder of the ridge separating the east from the north face. On the west, an easily accessible, nearly horizontal ridge reaches high up the peak. An easy grass-grown ridge running up from Forty Mile Creek gives access to the short north face. Following well marked game trails we traversed over to this ridge and were presently able to see that the north face is also very steep and smooth. It shows but one break, a very deep,

*Elevation about 8,600 feet.

broad, smooth and wet chimney which does not reach to the sky line. Above this chimney the rocks appear feasible.

To continue in a westerly direction would have necessitated a considerable descent, and as the prospects in that region did not look at all encouraging, we retraced our steps a little and traversed into the wide couloir of the east face over fairly steep but easy rocks. From where we stood it looked as if by following the couloir we could reach the highest shoulder on the ridge separating the east from the north face. This shoulder is about on a level with the broken rocks above the chimney in the north face, and a traverse into those might be possible. It also appeared to be possible to cross the couloir in which we stood, and climbing over the lower and easier part of the east face, reach a point high up on the ridge separating the east from the south face. Before coming to a decision I was very anxious to investigate the western face—it would take us some time to get around to it—and the late hour would furnish an admirable excuse to postpone a serious attempt on the mountain. Descending a little we turned out of the couloir north of a grassy knoll standing in the middle of our gully, reached the screes without difficulty over steep grass ledges, and went around to the south side of the peak. In trying to get some water off the north face of Mt. Edith, I dropped a Swiss aluminum cup I valued greatly between the rocks and the snow, and had no chance at all of recovering it. After a meal, we started up the gorge between Edith and Louis, presently turning north to ascend the rocky ridge to the west of the peak. I think we were both played out by the time we reached the sky line and unblushingly expressed our relief at the hopeless aspect of the western side of the peak. A possible couloir comes down to within some hundred feet of the ridge we stood on, but, the intervening wall is very steep and almost holdless. We crawled back to our horses and

rode slowly into Banff. A few days later I left for Honolulu, and it was not until September, 1917, that I had an opportunity of improving my acquaintance with Mt. Louis. I heard that in the meantime the peak had been ascended by Mr. A. H. MacCarthy, under the guidance of that crack climber, Conrad Kain, understood that their garments and hands had suffered greatly in the process, and knew that the climb must have been a difficult one. I did not get to see Mr. MacCarthy's description of his climb until my return to St. Louis late in September of this year.

On September 9th, 1917, Edouard Feuz, Jr., and I left Banff on horseback at 4.45 a.m., with heavy clouds hugging the mountains and reaching almost down into the streets. At 6.50 we left our horses a little northwest of the Mt. Edith Pass, and one hour later were at the foot of the couloir in the east face. The greater part of the mountain was shrouded in clouds so we had to rely entirely upon my prior knowledge of the surroundings. The mountain appearing to be quite dry, our single ice-axe was left behind and we entered the couloir. The easiest way to accomplish this is to follow the grass slopes and ledges north of the couloir and traverse into it where these give place to bare rock about on the level with the grassy knoll situated within the couloir. Above this knoll progress is barred by high, smooth slabs, over which water trickles. A steep open chimney to the north and a difficult traverse south enable one to circumvent this obstacle. From this point easy but somewhat slippery ledges, formed by a nearly vertical leaflike stratification running north and south, give access to the east face south of the couloir, and soon lead to easy ground. Presently a vertical wall, some ten feet high, immediately above wet and steep slabs, cuts one off from more easy ground above. (Point 1 on photo.) Fortunately a rock is jammed at a convenient spot between the wall and the slabs. Passing a rope around it enabled

Photo, Val. A. Fynn

MT. LOUIS FROM THE SOUTH

Showing Route, 1917

me to stand firmly on the slabs and quite close up to the wall while Edouard got on my shoulders, placed a foot on my raised hand, and thus reached a hold which enabled him to overcome the obstacle. Gradually working up and to the left (south) over easy ground, we finally came to a very steep and smooth wall, close under the ridge separating the east from the south face. (Point 2 on photo.) This is the highest point on the easy part of the east face. The only, and desperate, chance of reaching the ridge from here is to follow a small irregular crack. To the south a couple of very steep descending chimneys open out into space. To the north easy ledges appear to lead back into the big couloir high above the point at which we had left it. The clouds had lifted a little but were still immediately above our heads, so that our range of vision was restricted. We traversed north, to find that it was by no means easy to get back into the big couloir, and we judged that it would be extremely difficult and, perhaps, impossible to reach the high shoulder on the ridge beyond the couloir. On the way to this point we had observed high up in the east face a narrow couloir, into which we could not look and which appeared to end south of the peak. To reach it, it was necessary to climb a high, smooth and very steep wall to some easy ledges. A narrow crack again appeared to offer the only slim chance. Before attempting any of these rather hopeless lines we decided to have a look around the corner at the south end of the east face. Retracing our steps (to point 2) we descended a chimney, then a crack, down to an easy ledge, which appeared to lead in the desired direction. After a descent and a rise, we came at eleven a.m. to a small grass covered platform (point 3 on photo) just beyond the ridge separating the east from the south face and in full view of the latter, just above its very steep pitches. A glance sufficed to show that our best chance lay here, even though we could not see anywhere near the top for clouds. After a bite

we put on our climbing shoes, left one of our rucksacks, unfortunately also the camera, and Edouard led off at 11.30 a.m.

Slightly to the west and some ninety feet above us began an easy looking, narrow couloir, which promised to help us well on our way. Steep rocks lead to within a few feet of it when it becomes necessary to squeeze precariously around a projecting block in order to gain the gully. This gully is divided by a sharp rib and runs out all too soon on the ridge dividing the south and east faces. Somewhat below this point we changed leaders and climbed over into the parallel gully to the west. The dividing ridge was reached (point 4 of photo) after an interesting scramble. Here we found it necessary to rope off in order to reach the bottom of the gully we were making for. Fortunately we had about twelve feet of spare rope and this we left behind to facilitate our return. This couloir soon narrowed down to a chimney and became very difficult, but landed us at 1.00 p.m. on the edge of a comfortable, large platform at the very foot of the final peak (point 5 on photo.) The only visible means of progress is a deep cut reaching clear to the summit and some 450 feet high. A steep but easy chimney leads to this crack. It did not look to me as if I could find room to move in this crack, but close acquaintance proved my fears fortunately to be baseless, for the sides of the crack offer but precarious holds and would force the climber into very exposed positions. For the first 400 feet the crack is some 12 feet deep and rises at an angle of about 75 deg., and although much effort is required to make progress in chimney sweeper's fashion, yet we found the climbing comparatively safe and not abnormally difficult, even though the sides of this chimney were wet. Three wedged rocks obstruct progress near the top of this stretch and force one out to the outside edges of the crack. Above these rocks the angle eases off considerably, the crack widens out into

a couloir, and in a surprisingly short time one stands in a gap between two summits of nearly equal height. The one west is, however, decidedly higher, and we reached it at 2 p.m. Ever since abandoning the camera, the weather had been improving steadily, and it was now quite clear in every direction, giving us a very pretty view down Forty Mile Creek and an interesting outlook on the peaks in the immediate vicinity. Edouard's climbing shoes had long since seen their best days and he had lost part of his soles early in the day, so I assumed the more strenuous work of bringing up the rear. Leaving the top at 2.25 p.m. we retraced our steps, reaching our rucksack at 5.05. On the way down we prospected somewhat and came to the conclusion that the difficult westerly couloir or chimney on the south face could be avoided by crossing it a few feet above the roping off place, and following the much easier rib, west of it, until close under the last plateau (point 5), where it is easy to traverse back into the outlet of the difficult couloir. At 5.25 we had crossed the big couloir in the east face and were on the grass slopes immediately above the screes. As we changed to our heavy boots we had the pleasure of watching a herd of fifteen deer within some three hundred yards of us. Twenty minutes later we were following the game trails on our way to the horses. A pair of sheep, old and young, going in the opposite direction, seemed for a time inclined to claim the right of way, but finally turned off up the gorge between Edith and Louis. While I hurried to a high point east of Mt. Edith to try and get at least one photograph of our mountain, Edouard kindly undertook to look for the drinking cup I had lost last year. I luckily directed him to the exact spot and he found it at once, all but covered by small loose stones. I was able to secure the appended picture notwithstanding the fast fading light, and at 7.30 p.m. we had reached our horses. Starting at 7.50 with horses rearing and bucking after their long rest and ample meal of oats, we made

Banff by 9.10 p.m., much pleased with our day and without a scratch. As far as my experience goes, Mt. Louis is the hardest rock climb in the Canadian Rockies or Selkirks. Edouard thinks the same. Mt. Pinnacle offers only one short passage which is difficult; there are several more difficult bits on Mt. Louis. Eliminating route hunting, four hours should be ample time to take one from the foot of the east face to the summit.

To thoroughly enjoy the climb and avoid danger from falling stones it should be undertaken when the rocks are quite dry and climbing shoes can be worn. Two light spare ropes will save much time, a twenty-foot rope to be left at point 4 on the way up and a sixty-foot to be carried to the platform 5 just below the final peak.

On carefully reading Mr. MacCarthy's description of his ascent (page 79, C.A.J., 1917), I came to the conclusion that his party did not ascend the east face to as high a point as we did, traversed into the south face considerably below our line, and began the ascent of this face more to the west than we did. We both started from the same couloir in the east face and both utilized the same crack above the platform 5 at the foot of the final peak. Our traverse around the corner into the south face (from point 2 to point 3) was easy and short. Our main difficulties occurred at point 1, just beyond point 3, while getting into the first chimney on the south face and in the second chimney on that face between points 4 and 5. On the appended photograph our route is shown exactly from point 2 to the summit, but only approximately from point 2 down. The lower part of the route could not be shown accurately because of the pronounced foreshortening of the east face in the photograph.

GLIMPSES OF THE HIGH ANDES

By A. P. Coleman

It was late winter, the middle of August, when I left Buenos Ayres to cross the 700 miles of sere and bare pampa to Mendoza, in the foothills of the Andes. The western part of the journey was through a desert of cactus and thorn bushes, but the melting of distant snows sends a little river down to the plains so that rills of cool water flow through the streets of Mendoza and vineyards and irrigated fields flourish all about it. Mendoza is the Calgary of the Andes, and from its streets of one-storied adobe houses a few distant snow peaks can be seen through the clear air rising above a tumult of gray or red or brown lower mountains; and a narrow gauge railway winds its slow way up the desolate river valley to Puente del Inca, almost in the heart of the mountains, 9,063 feet above the Atlantic. At this tiny Andean Banff I stopped between trains to see the highest summit in America. As there are only two trains a week on the Transandino railway this meant a stay of four days.

I was the sole guest in the huge hotel, which is said to be crowded with blasé tourists from Buenos Ayres in hot January and February, baths in the warm springs and the cool mountain air being the attractions, as at Banff in July and August. In spite of the frigidity of the hotel I was well looked after, being invited by the manager into his own stove-warmed apartment at meal times and having at least a foot of blankets heaped on my bed at night. By day I kept on the move exploring the nearby valleys and mountains for the best views of the high Andes, here at their culminating point.

Aconcagua, the highest volcano in the world, reaching 23,393 feet according to the Encyclopaedia Britannica, is barely caught sight of from the railway; but a walk up a side valley to a small frozen pond, highly praised in this almost lakeless region, brings the giant into splendid view. The best viewpoint of all, however, seems to be from a col reached by a rather stiff climb behind the hotel. Here, at a height of 10,700 feet, one has in fine weather a grand vision of the peak fifteen or twenty miles away and more than 12,000 feet higher, showing ruddy cliffs and gleaming snows and a glacier with blue ice overhanging an abyss.

To come into closer contact with the mountain I made a hard morning's tramp up the valley to the north of the railway, fording the icy river above my knees and toiling over endless old moraines to a height of about 12,000 feet, where I stood on one of its lowest slopes. Unluckily a projecting spur cut off the glacier and the amphitheatre beneath, while clouds gathered threateningly round the summit and sent a few snowflakes in my direction; so I turned back disappointed over the eleven miles of rough travel that separated me from the hotel.

On my last day I undertook a small climb across the valley, labouring up sliding scree and two steep snowfields to the highest point on a ridge, at 11,360 feet, only to find that a higher intervening peak hid all but a corner of Aconcagua. However, as compensation, I had views westward and southward of several mountains reputed to be over 20,000 feet in height, including Tupungato, only a thousand feet lower than Aconcagua itself. Two or three small glaciers could be seen but no large continuous snow fields, I suppose because of the dryness of the climate, which accounts also for the sparseness of alpine plants, the lack of forests on the lower slopes and the absence of lakes in the valleys. The unmitigated desolation of this wilderness of gray or sometimes brilliant red peaks unrelieved by the green of alpine

Sketch, A. P. Coleman

ACONCAGUA, FROM THE SOUTH

23,393 Feet Above Sea Level

Sketch, A. P. Coleman

SORATA FROM 14,000 FEET

21,490 Feet Above Sea Level

meadows or the gleam of water except the muddy torrent in the valley beneath was most impressive, but lacked some of the elements of beauty found in most other mountain regions.

My four days were over and the little train with its cog wheels gripping a central rail crawled up to the Inca's natural bridge and took me on board. An hour or two later we dived through the tunnel which pierces the great divide (at 10,633 feet) and then zigzagged recklessly down through still wilder mountains with plentiful snow to Santiago, the handsome capital of Chile, set in the midst of a fertile irrigated plain where the peach orchards were in bloom. That evening from a hill top in the city I saw the snowier western side of the great mountain range grow ruddy and glow in the sunset, and then the high Andes sank as grey ghosts into the twilight.

Uspallata pass, through which the railway comes, has few rivals in the world as far as rugged scenery is concerned. It rises to 13,300 feet where the bronze "Christ of the Andes" spreads his hands in blessing over the two republics; a dozen lofty peaks surround it; and the mountains drop suddenly down to the Argentine plain on the east and the Pacific on the west. There is no more tremendous barrier between countries on our planet except the huge bulk of the Himalayas between India and Central Asia.

The next great group of snow peaks is eleven hundred miles to the north within the tropics in Bolivia, where the Cordillera swings from north to northwest. To see them I took a little coasting steamer from Valparaiso to Antofagasta, the seaport of the Chilean nitrate region, where a railway runs northeast towards Bolivia. It is the quaintest of railways, with a span of only two and a half feet, and yet running comfortable trains equipped with dining and sleeping cars right through the driest

desert in the world, where all water has to be piped down from melting snows two hundred miles away.

This central part of the Andes is as different as possible from the great range in the south. Instead of a profoundly dissected mountain chain carved into deep valleys separated by knife edges, through which the railway winds its crooked route to a sharply marked divide, one finds a huge ramp of tableland quickly ascended from the sea and reaching 13,000 feet near its eastern margin. From this vast plateau 200 miles wide and several hundred miles long rise isolated peaks or groups of mountains, more crowded along the eastern and western sides. The railway, after scaling the plateau, runs through the gray or brown plains whence most of the world's supply of nitrate is drawn, then follows the white beds of borax lakes, here and there swerving to avoid some lava stream or volcanic cone, one or two of them steaming and more or less active, others quiescent and scantily snow clad near the summit. Rising with rather gentle slopes above the flat tableland it is hard to believe that some of them, like Ollagüe, reach 20,000 feet above the sea. Planted on a pedestal two miles and a half high a cone does not need to rise many thousand feet to be classed among lofty mountains.

After four hundred miles by rail one approaches La Paz, the chief city of Bolivia and the highest capital in the world, just over the eastern edge of the tableland, with its railway station 12,050 feet above the sea. Here a row of magnificent peaks stretches across the horizon, including splendid Illimani (21,190 feet) and still grander Sorata (21,490 feet) seventy-five miles to the northwest, with others not far below them. Illimani makes a noble background for the gay streets of La Paz, but the finest view of the mountains was from Guayqui on Lake Titicaca, a few hours by rail northwest of La Paz. Here a spare half day was spent in a climb over steep and rocky slopes terraced and irrigated by the Incas to a

hill top 1,500 feet above the lake, which is 12,838 feet above the sea according to the railway levels. It was now early spring (September 20th) and wild flowers were waking into bloom, the showiest being great yellow and rosy red cactus blossoms. From the top I looked northeast across the great lake to Sorata, fifty miles away, and could follow the rest of the white topped giants for a sweep of more than one hundred miles. They seemed snowier and more impressive than Aconcagua and its neighbors, and displaying their full height from the low plains of the Amazon region beyond they must appear as one of the finest ranges in the world.

Descending to the lake, half as large as Ontario, to get on board the little steamer which was to take me to the other end, Sorata glowed like an immense live coal in the dusk and was wonderfully reflected in the reedy shallow water.

From Puno at the north end of the lake a railway runs to the Pacific, crossing a pass at 14,666 feet, the highest point attained in my journey. Lack of time prevented me from visiting the famous old silver mining town of Potosi, reached by a branch railroad which actually climbs to 15,814 feet—higher than Mont Blanc. Half way down to the Pacific is the beautiful city of Arequipa in its irrigated plain green with perpetual spring at the foot of El Misti, a snow topped volcano 19,250 feet in height; and a few hours later one reaches Mollendo, a desolate Peruvian seaport, from which I sailed for Panama and home.

The fine volcanoes of Equador, the third group of high peaks in the Andes, made famous by Whymper's climbs in 1870, were passed unseen, though our ship halted at Guayaquil, whence a railway climbs up to Quito and the high plateau. Chimborazo, the highest of them, reaches 20,498 feet, according to the Century Atlas, so that they scarcely equal the Bolivian Andes and are decidedly lower than Aconcagua and its neighbors. They are, however,

in a moister equatorial region, and seem to have larger snowfields and glaciers than any mountain farther south, judging from pictures by Whymper and later authorities.

We have no mountains in North America to compare with the high Andes except the little group of peaks including St. Elias, Logan and McKinley at the boundary of the Yukon Territory and Alaska, and none of these quite reaches the Andean heights. No peak of the Rocky Mountains of Canada or the United States comes within a mile of the elevation of Aconcagua; and at least twenty-six summits of the Andes are reported to reach 20,000 feet or more. As to height, our North American mountains are distinctly in the third rank, falling behind those of South America, not to speak of the giants of the Himalayas; but there are some compensations.

While gazing in admiration at Aconcagua my mind swept back to a vision of Mt. Robson, seen years before from the hills across Berg Lake. Now Robson is 10,000 feet lower than Aconcagua, but its shaggy evergreen forests and its large and beautiful glaciers reflected in turquoise glacial waters seem to me to make a far more splendid picture than any mountain scene in the Andes.

Some years ago I had a glimpse of Mount St. Elias from the sea, the clouds parting towards evening and showing at full length its 18,000 feet of delicately tinted snowfields, glaciers and cliffs; and this view far surpasses in my memory the most splendid apparition of the Andes in gorgeous evening robes.

The weak point in the scenery of the South American mountains is to be found in their warmer and much more arid climate, which greatly limits their snows, makes their glaciers few and small, and robs their slopes of the forests and alpine meadows that are so good a foil for the snows in European and North American mountains.

NEW LIGHT ON MOUNTS BROWN AND HOOKER

By E. W. D. Holway

The recent publication by the Champlain Society of Thompson's Journals and by the Royal Horticultural Society of those in its possession written by Douglas has led to a search for the earliest map showing these mountains with the heights and to trying to ascertain who was really responsible for the exaggeration.

The publication from which the quotations in the Alpine literature have been made is in the Companion to the Botanical Magazine 2, 79-182, 1836, under the title: "A brief memoir of the life of Mr. David Douglas, with extracts from his letters."

The statement is made: "We should have known little or nothing of his adventures were it not for a Journal which he kept with great care . . . and which has been deposited in the library of the Horticultural Society of London. From that Journal is here selected whatever is likely to prove interesting to our readers." Under date of May 1st, 1827, is: "We continued ascending, and had the satisfaction at ten to reach the summit, where we made a short pause to rest ourselves, and then descended the eastern side of the Big Hill to a small round open piece of ground, through which flowed the smaller or East branch of the river, being the same as we had left yesterday at the western base of the Big Hill. . . . Being well rested by one o'clock I set out with the view of ascending what seemed to be the highest peak on the north. Its height does not appear to be less than 16,000 or 17,000 feet above the level of the sea. After passing over the lower ridge I came to about 1,200 feet of, by far,

the most difficult and fatiguing walking I ever experienced, and the utmost care was required to tread safely over the crust of snow. A few mosses and lichens, *Andreae* and *Jungermanniae*, are observable, but at the elevation of 4,800 feet vegetation no longer exists; not so much as a lichen is found in a tract of 1,200 feet of eternal ice. . . . This peak, the highest yet known in the Northern Continent of America, I felt a sincere pleasure in naming 'Mount Brown,' in honour of R. Brown, Esq., the illustrious botanist. . . . . A little to the southward is one of nearly the same height, rising into a sharper point. This I named 'Mount Hooker,' in honour of my early patron the Professor of Botany in the University of Glasgow. This mountain I was unable to climb."

This was copied from the short Journal, certainly written after Douglas returned to England. Whoever copied it for Hooker made remarkable changes, as will be seen by this from the publication by the Royal Horticultural Society, which was carefully compared with the original manuscript.

From the same date of May 1st, 1827:

"After breakfast, being well refreshed, I set out with the view of ascending what appeared to be the highest peak on the north or lefthand side. The height from its apparent base exceeds 6,000 feet, 17,000 feet above the level of the sea. After passing over the lower ridge of about 200 feet, by far the most difficult and fatiguing part, on snow shoes, there was a crust on the snow, over which I walked with the greatest ease."

Turning now to the long and undoubtedly first Journal we find under the same date:

"After breakfast at one o'clock, being, as I conceive, on the highest part of the route, I became desirous of ascending one of the peaks, and accordingly I set out alone on snowshoes to that on the left hand or west side, being to all appearances the highest. The labour of

ascending the lower part, which is covered with pines, is great beyond description, sinking on many occasions to the middle. Half way up vegetation ceases entirely, not so much as a vestige of moss or lichen on the stones. Here I found it less laborious as I walked on the hard crust. One-third from the summit it becomes a mountain of pure ice, sealed far over by Nature's hand as a momentous work of Nature's God. The height from its base may be about 5,500 feet; timber 2,750 feet; a few mosses and lichens 500 more; 1,000 feet of perpetual snow; the remainder, towards the top, 1,250, as I have said, glacier with a thin covering of snow on it. The ascent took me five hours; descending only one and a quarter. Places where the descent was gradual, I tied my shoes together, making them carry me in turn as a sledge. Sometimes I came down at one spell 500 to 700 feet in the space of one minute and a half."

Here we have his first account written no doubt on the spot, with no estimate of great height. My theory is that possibly after he returned to England he learned of Thompson's Survey and that he then inserted the height and named the mountains.

Looking in Greenhow, Memoir, p. 11, 1840, we see the positive statement that Thompson gave these elevations.

"The highest points in the Rocky Mountains and probably in North America, if not in the whole western continent, are those about the 52nd degree of latitude near the northernmost sources of the Columbia River. Mr. Thompson, the astronomer of the Hudson's Bay Trading Company, has measured several of these peaks, of which one, called Mt. Brown, is estimated by him at sixteen thousand feet, and another, Mount Hooker, at fifteen thousand seven hundred feet. It has been stated that the same gentleman has recently found other points farther north which he considers to be more than 10,000 feet higher than either of those mentioned."

Where Greenhow obtained his information is no doubt

impossible to ascertain. The Manuscript Division of the Library of Congress reports that the Library has no correspondence on the subject, although Greenhow's work was prepared there.

Douglas also mentions higher peaks, saying: "Nothing, as far as the eye could perceive, but mountains such as I was on, and many higher."

In Thompson's Journals, under March 10th, 1809, is his measurement of Mt. Nelson and estimates of the mountains at Athabasca Pass, as follows:

"By a close estimation of the descent of the Columbia River from its source to the sea I found it to be 5,960 feet (including its falls) in 1,348 miles, being an average of four feet five inches per mile. Let the descent at the second Kootanae Lake* be 5,900 feet above the level of the sea; here was one step gained and the fine plains on the East Side of this Lake enabled me geometrically to measure the height of the secondary mountains; due east of me were a chain of bare steep mountains on which no snow lodged, and destitute of vegetation; to the west was the rude pyramid of Mount Nelson (for so I named it); the Base Line was carefully measured and the angles of the heights taken with the sextant in artificial horizon of Quicksilver. By this method I found the height of Mt. Nelson to be 7,223 feet above the level of the Lake, which gave 13,123 above the Pacific Ocean. . . . At the greatest elevation of the passage across the Mountains by the Athabasca River the point by boiling water gave 11,000 feet and the peaks are full 7,000 feet above this passage; and the general height may be fairly taken at 18,000 feet above the Pacific Ocean."

One would infer that these are certainly Thompson's own figures, but on January 10th, 1811, when he crossed the Athabasca Pass he says: "Gale of wind, the afternoon fine, the view now before us was an ascent of deep snow, in all appearance to the height of land between the

*Lake Windermere, 2,700 feet.

Atlantic and Pacific Oceans. . . . The altitude of this place above the level of the ocean by the point of boiling water is computed to be eleven thousand feet (Sir George Simpson)."

Can any one find what Simpson had to do with these elevations? The books are not available here.

The earliest map giving Mt. Brown and Mt. Hooker, with the elevations of 16,000 and 15,700 feet is that issued in October, 1829, with the first part of Hooker's Flora Boreali-Americana. Douglas superintended this map, as I find in the 1836 Memoir, quoted above, letters from him to Hooker.

Under September 14th, 1820, "I had almost forgotten to say that I have put the last impression of your map through my hands. It is very fine and will surely please you. The route of Franklin, Richardson and Drummond is marked in RED, Parry's in BLUE, and mine in YELLOW. I must have the latter tint changed to green, for yellow is a most sickly hue for a *culler of weeds*."

And October 27th, 1829: "I cannot tell you how pleased I am to have seen the first part of your Flora Boreali-Americana before sailing, and that I am enabled to take it with me to America. The map is good and will increase the interest of the book."

Douglas' route is marked in green on the map, which has the date of publication, October, 1829, printed on it.

SUPPLEMENTARY NOTE

By James White

Mr. Holway's "New Light on Mounts Brown and Hooker" is very interesting, particularly his recognition of the value of the statement in the Thompson

"Narrative" respecting the elevation of Athabaska Pass and its bearing upon the enormously exaggerated altitude of Brown and Hooker.

The most important point in the evidence available is contained in "A Sketch of a Journey to the North-Western Parts of the Continent of North America during the years 1824, 1825, 1826 and 1827," reprinted in the Royal Horticultural Society's "Douglas Journal." It contains a condensed account of the journeys, which are "in Douglas' own handwriting." On page 72 he states that the height of Mount Brown "from its apparent base exceeds 6,000 feet, 17,000 feet above the level of the sea," a clear statement that the pass is 11,000 feet above sea level.

According to Prof. A. P. Coleman, the actual height of the peak above the summit of the pass is nearly 4,000 feet. The difference, 2,000 feet, is not greater than might be expected. Douglas was probably not a trained observer so far as estimating heights was concerned, and his round figure indicates that he had no instrument for measuring altitudes, whereas Prof. Coleman had an aneroid barometer.

The principal error, therefore, is contained in the great overestimate of the altitude of Athabaska Pass, which Douglas virtually stated at 11,000 feet. Further evidence that Douglas accepted this over-estimate is found on page 347, where he states that *Pinus Banksiana* was found in lat. 53° N. at "the height of 11,000 feet above the level of the sea," and on page 71 he says that he found *Pinus Banksiana* at the summit of the Athabaska Pass.

As stated in Mr. Holway's article, Thompson in his "Narrative," also states the elevation of the pass at 11,000 feet, but specifically credits it to Sir George Simpson. Mr. J. B. Tyrrell has kindly furnished the below extract from Thompson's original notes of January 10th, 1811, the day he crossed the Athabaska Pass. Thompson wrote:

Jan. 10, *Thursday.* Ther. 16. A very snowy Day & southly Gale. At 8 a.m. set off, having held on abt. 1 m. we left half load from the wetness of the Snow, the Road otherwise being good. DuNord threw part of his Load aside saying he would not haul it any more, altho' he has only 80 lbs. to 2 good Dogs. We then went abt. 1 m. to the height of Land, when we descended abt. 1¼m. & camped at 3½ p.m., very bad hauling all day, as the Snow from the mildness of the weather is wet. We camped in the Snow, it being too deep to be cleared away. Fine Evening. Our Co. S. 25 W. I ordered DuNord to return for his bad behaviour, but excusing himself, I permitted him to continue, altho' in my opinion he is a poor spiritless wretch.

As his original notes do not contain any reference to any elevation of the pass or to any attempt to determine the altitude, it is evident that Thompson added the elevation in 1849, when writing his "Narrative" for publication. Taken in conjunction with the bracketed note, we have almost a demonstration that Thompson obtained the estimated altitude of 11,000 feet from Simpson.

Douglas arrived at Norway House, June 16th, 1827. The following day he wrote:

"This morning at daylight George Simpson, Esq. (Governor), arrived from Montreal, who, I state with pleasure, gave sufficient testimony of his friendly attention and kind offices."

Douglas says that he spent "a few days" at Norway House and then left with Sir John Franklin. Franklin's "Narrative" indicates that they did not leave before the 28th. It is, therefore, probable, that Douglas also obtained this estimated height from Simpson, though there is a possibility that it was generally accepted as correct by the officers of the Hudson's Bay Co. and North West Co.

The surprising feature about Douglas' statement is

that, as a trained botanist, he must have been informed respecting the tree-limit in other parts of the world. Yet he says that the timber-line is 2,750 feet above Athabaska Pass. Therefore, he accepts the result, namely, that in latitude 52° 27′, the tree-limit is 13,750 feet above the sea! In the light of experience elsewhere, how could Douglas accept without question this extraordinary conclusion?

Respecting Greenhow's "Memoir," 1840, too much reliance should not be placed on his statement. For instance, he says that "Mr. Thompson, the astronomer of the Hudson's Bay Trading Company, has measured several of these peaks, of which one called Mt. Brown is estimated by him at sixteen thousand feet, and another, Mount Hooker, at fifteen thousand seven hundred feet. It has been stated that the same gentleman has recently found other points farther north which he considers to be more than 10,000 feet higher than either of those mentioned."

Thompson made surveys for the Hudson's Bay Co. during 1790 to May, 1797. From 1797 to September, 1812, he was employed by the North-West Co. He made no surveys in the Rockies or west of them while in the employ of the Hudson's Bay Co.; the Hudson's Bay Co. was never known as the "Hudson's Bay Trading Co."; there is no evidence that Thompson "measured" the altitude of any peaks near Athabaska Pass; Thompson says nothing about the elevations of "other points farther north" and, as Thompson left the Western country in 1812 and never returned to it, he could not have "recently" found "other points farther north."

On the other hand, an examination of Douglas' "Memoir" in the "Companion to the Botanical Magazine," vol. II., 1836, and the map in Hooker's "Flora Boreali-Americana" practically demonstrates that Greenhow erroneously attributed to Thompson the statements that had been made by Douglas. Again, as the "Memoir"

was published in 1836, and Greenhow's work was published in 1840, we have the explanation of the use of "recently" with reference to the higher peaks to the north of Athabaska Pass.

The principal value of the above is that it adds another error of statement to those previously known to exist in Greenhow's works.

SCIENTIFIC SECTION

THE FLORA OF JASPER PARK, ALBERTA

By J. M. Macoun

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Every lover of flowers knows the delight of finding a rare or beautiful plant which he has not seen before, but his feelings are not to be compared with those of the botanist who visits a region in which the type specimens of many species were collected. His hope is not to find new species but to rediscover old ones, and the commonest have a special interest to him if he knows that they were first collected by a botanist within a few miles of his camp, or perhaps within a few yards of where he sees them. This was the writer's experience last summer (1917) when he visited Jasper Park for it was within the limits of the present Jasper Park that Drummond in 1825-1826 collected many of the specimens upon which species described from his collections are based. Douglas also collected along the Athabaska River in 1827 on his homeward journey from the West Coast. Mr. Standley must have forgotten this when he wrote in his report on the "Plants of the Alpine Club Expedition to the Mount Robson Region"*: "It was to be expected that plants from this particular area where previously no botanical collections had been made would contain many things of interest." So far as is known no botanical collections were made in the Jasper Park

*The Canadian Alpine Journal, 1912, special number, p. 76. Copies can be obtained from the Secretary-Treasurer, Sidney, Vancouver Island, B.C., price $1.00.

region between 1827 and 1898 when Mr. William Spreadborough collected about 300 species along the Athabaska and Miette rivers and in the vicinity of Yellowhead Pass. Several species were described from Mr. Spreadborough's material but no list was published. His specimens are in the herbarium of the Geological Survey.

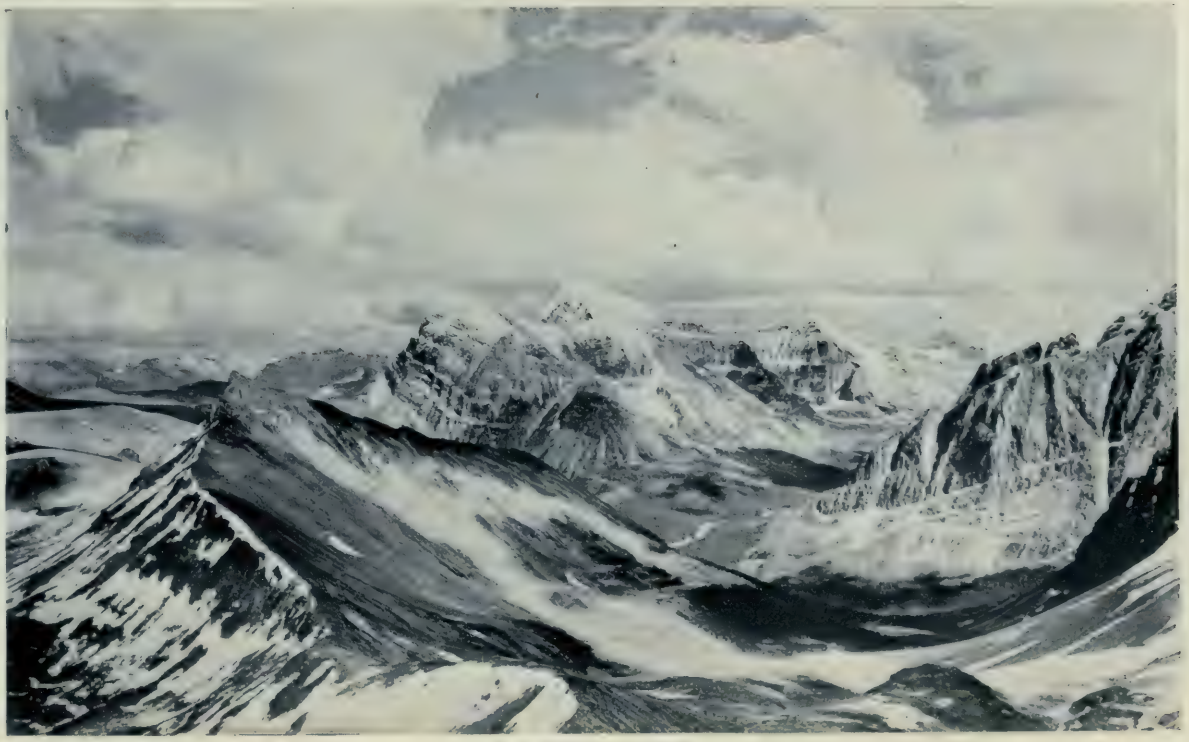
Mr. Standley's paper, referred to above, is a valuable contribution to the knowledge of the flora of the region as although only 147 species are listed several new species are described and his notes on other species are of great value. Until quite recently the collector in Jasper Park would have found it difficult to determine his specimens in the field, as no books published later than Hooker's "Flora Boreali Americana" covered that region, but Rydberg's "Flora of the Rocky Mountains," published last January, described everything that is known to occur as far north as Lat. 56° and should be in the hands of every visitor to the Rocky Mountains.

The writer did not reach Jasper Park until July 23rd, much too late to attempt anything like a complete list of the plants growing in the vicinity of the town as many of the early-flowering species had disappeared and many others could be only doubtfully determined. As Jasper is, for the present at any rate, the point at which most visitors to the park leave the train, and many of them stay there for a few days, it seemed best to collect everything in the immediate vicinity before going further afield, so camp was made by the Athabaska River about two miles from the Administration Building. Within easy walking distance of this camp more than 300 species were collected in three weeks and two visits were made to the summit of Mount Fitzhugh. Good roads and trails make collecting easy and the flora is of such a mixed character that within a radius of a few miles the collector will find familiar plants of the eastern woodlands, typical prairie species, the characteristic sup-alpine flora and, on the

adjacent mountains, true alpine species at comparatively low altitudes. The vicinity of Jasper is rich in willows, grasses and carices, especially in the valley of the Miette River where there are many marshes. All the willows known to occur in the northern Rockies were collected in 1917. The rare *Carex Franklinii*, not collected since Drummond's time, was quite abundant near the discharge of Horse Shoe Lake.

One who has not some knowledge of the plants that would be expected to grow at Jasper Park should be careful in recording as indigenous some of the species which he will find not only near the village but along the roads and trails several miles from town. There is a prolific growth of weeds of all kinds, but in addition to these there are many prairie species and a few from British Columbia which almost certainly were brought to Jasper in baled hay. An effort was made by the writer to segregate these species, and when the report on his work in Jasper Park is published special mention will be made of them.

As good trails lead to the summits of Fitzhugh and Goat mountains, and these summits can be reached in two or three hours after leaving the valley, no lover of flowers who visits Jasper for even a few days should fail to spend one of these days above the tree line. The character of the flora does not differ greatly from that of the mountains around Banff, although the number of arctic-alpine species is greater and several will be found which are peculiar to the region. As the writer had time for a thorough examination of only one mountain, he selected the one—Mount Edith Cavell—which he thought would in the future be visited by the greatest number of those who go to Jasper Park. Easy of access and commemorating as it does the martyrdom of Edith Cavell, it will for generations attract visitors who might not otherwise visit Jasper Park. The usual camping place on Cavell Lake, at the base of Mount Edith Cavell, can be



Photo, M. P. Bridgland

MT. EDITH CAVELL
11,100 Feet Above Sea Level
From the Northwest

reached in a few hours from Jasper, in fact the round trip is often made in one day. For half the distance there is a good wagon road and from the crossing of Cavell Creek an easy trail is followed to the lake at about 6,000 feet altitude. Visitors usually camp at the south end of the lake within a quarter of a mile of the glacier. Between the moraine and the lake there is a considerable extent of level ground broken by innumerable rivulets, and on the west shaded by the almost perpendicular side of the northern half of Mount Edith Cavell. The close proximity of the glacier and the coldness caused by the shade make it possible for true alpine species to thrive at a much lower altitude than is usual, and nearly all the species referred to below may be collected without climbing a hundred feet above the lake. Mount Edith Cavell itself is too difficult to be attractive to the average botanical collector, but immediately adjoining it are other mountains so easily climbed that horses may be taken through the woods to the tree limit, above and beyond which one may wander for miles at an altitude of between 7,500 and 8,500 feet, occasional peaks taking one several hundred feet higher.

Everyone who has visited the Rockies thinks he has seen some one place which excels every other in the brilliancy and variety of its flowers, but for the reasons mentioned above the writer is confident that few localities exhibit a larger number of species in a small area than the base of Mount Edith Cavell. No attempt will be made to enumerate all the species, in fact those which are mentioned are those which may be seen by anyone who spends a day in the vicinity of Mount Edith Cavell. Ferns are rare, but several species grow below the ledges and in crevices of the rock a few hundred feet above the lake on the west side. Grasses of many species, especially the *Poas*, are abundant and many rare Carices are found on the mountains and high plateaus.

Many of the most conspicuous and familiar species are

of the Crowfoot Family, the colours ranging from white to yellow and deep blue. *Anemone occidentalis* growing close to the melting snow is, perhaps, the most beautiful, and associated with it one will generally find the Mountain Buttercup, *Ranunculus Eschscholtzii*, and more rarely the tiny *R. pygmæus*. *Anemone Drummondii*, *A. parviflora* and *A. tetonensis* are all abundant and in suitable places the Globe Flower, *Trollius albiflorus* and Columbine, *Aquilegia flavescens*, the latter in all shades of yellow and often tinged with pink. *Caltha leptosepala* is common and the Larkspur, *Delphinium Brownii*, rare. The Chickweed and Mustard Families are represented by many species, none of which are conspicuous or attractive except the Moss Campion, *Silene acaulis*, and the Nodding Pink, *Lychnis apetala*, the former often in "cushions" a foot or more in diameter, covered by a solid mass of pink flowers. Nearly if not quite all the alpine species of *Draba*, *Arabis* and *Arenaria* may be found, and these difficult genera offer a wide field for study. One of the most interesting species growing near Mount Edith Cavell is *Papaver pygmaeus*, the smallest of the poppies, recorded by Drummond as *P. nudicaule* "at a great elevation between lat. 52° and 55°". It was found by the writer at an altitude of about 9,000 feet on the bare mountain southeast of Mount Edith Cavell.

The Saxifrage Family is represented by many species, the commonest being *S. Lyallii*, *S. punctata*, *S. bronchialis*, *S. rivularis*, *S. caespitosa*, *S. adscendens*, *S. aizoides* and *S. cernua*, and above 8,000 feet *S. oppositifolia* may always be found, generally associated with *Crepis nana*. The buttercup-like but pure white flowers of the Fringed Grass of Parnassus, *Parnassia fimbriata*, may be seen along every stream and rivulet and clumps of Alum Root, *Heuchera glabra*, grow among the broken rocks that border the moraines. Not many species of the Rose Family were collected near Mount Edith Cavell, even the Cinquefoils being represented by few species, but, were there none

but *Potentilla glaucophylla*, the genus could not be overlooked as the bright yellow flowers of this species are to be seen almost everywhere. *P. nivea* is also common, and *Rubus arcticus*, smallest of raspberries, is seen occasionally.

On the western slopes of Mount Fitzhugh nearly thirty species of the Pea Family may be collected in a few hours, including all the alpine and sub-alpine genera, but the family is poorly represented in the vicinity of Mount Edith Cavell. The Alpine Milk Vetch, *Astragalus alpinus*. is the commonest species, though not as conspicuous as the rose-purple *Hedysarum*, whose flowering spike is at high altitudes almost as long as the rest of the plant. The flowers of *Oxytropis podocarpa* would not attract much attention, but its bladder-like and often highly coloured pods catch the eye at once. The puzzling and variable *Epilobiums* are to be found everywhere, and along the base of the moraines there are patches of the Alpine Fireweed or Willow Herb, *E. latifolium*, scores of yards in extent, its rose-purple flowers often two inches or more across.

Of the Heath Family, the white *Cassiope Mertensiana*, the pink *Phyllodoce empetriformis* and the sulphur-yellow *P. glandulifera* cover the mountain slopes, and along the lake *Kalmia macrophylla*, only a few inches in height, grows close to the water's edge. The *Vacciniums* offer the only fruit to be found near Mount Edith Cavell, and only the Grouse-berry, *V. scoparium*, is common. In September the ground in many places is covered with the light red or wine-coloured fruit of this species. It was only on the west side of the lake that *V. membranaceum*, the finest of the huckleberries, was found in any considerable quantity. Elsewhere in Jasper Park, especially in Yellowhead Pass, wild fruit of all kinds is abundant, and after the middle of August campers need carry no dried or canned fruit with them. The Gentian Family is well represented by the beautiful *G. propinqua*, varying in size from a scant inch with a single flower to

six inches or more with many flowers, and at high altitudes *Gentiana glauca* can always be found. There are many species of the Borage Family in the vicinity of Jasper, but only the Forget-me-not, *Myosotis alpestris*, on the mountains, its bright torquoise-blue flowers making it recognizable from a considerable distance.

The Indian Paint Brush, *Castilleja*, is the most abundant and conspicuous Figwort in the mountains, and many species grow in the Mount Edith Cavell district. They range in color from pale yellow through many shades of pink, mauve, scarlet and crimson, and care should be taken not to mix the species when collecting them. Good specimens are not difficult to name, either in the field or the herbarium, but no genus is more difficult if the specimens are poor. *Pedicularis* is represented by nearly as many species, *P. bracteata*, *P. capitata*, and *P. lanata* being the commonest. Other Figworts are *Mimulus Langsdorfi*, *Pentstemon Menziesii* and *Veronica alpina*. There are three Harebells, *Campanula petiolata* at low altitudes, *C. lasiocarpa* on the lower and *C. uniflora* on the higher mountains.

As elsewhere in alpine regions, the Composites are represented by many highly coloured species, yellows and blues predominating, the yellow of the *Arnicas* often covering the hillsides; *A. foliosus*, *A. cordifolius*, *A. latifolia* and *A. alpina* are the commonest species, but there are several others. Other yellow flowers are *Senecio triangularis* in patches along every brook and rivulet, and *Solidago scopulorum*, varying in size and habit according to altitude. While only one *Aster*, *A. Richardsonii*, is found above 6,000 feet, there are many species of *Erigeron*, ranging from the showy *E. salsuginosus*, often two feet in height, to the tiny *E. unalaschkensis*. The Everlastings are represented by at least ten species, the ground near the base of Mount Edith Cavell being in places carpeted with the beautiful *Antennaria media*, which has been called the

Cavell Everlasting, the writer not hesitating to substitute this name for the not especially appropriate one, Silky Everlasting, given to this plant by Mrs. Henshaw. Other easily recognized species are *A. lanata*, *A. alpina*, *A. roseus*, *A. microphylla*, *A. pulvinata* and *A. monocephala*.

These very sketchy notes on the flora of Jasper Park do scant justice to the beauty and variety of the flowers which grow there. Anyone who has camped on an alpine meadow will recognize that, but all such must admit also that alpine flowers must be seen to be appreciated, and all the writer has endeavoured to do is to mention a few of the most attractive species. As the very large collection he made in Jasper Park last season has not been touched since his return from the field, no mention could be made of the rarer species or of the three or four which he believes to be new to science.

ADDENDA TO THE BIRDS OF JASPER PARK, ALBERTA

By P. A. Taverner

Being additional and further records made to the list of the Birds Collected or Observed on the Expedition of the Alpine Club of Canada to Jasper Park, Yellowhead Pass and Mount Robson Region. By J. H. Riley, The Canadian Alpine Journal, special number, 1912, pp. 47 to 75*.

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The following is based upon the work done during the summer of 1917 in Jasper Park, Alberta, by the Geological Survey of Canada. The party composed of J. M. Macoun, Dominion Botanist, and Wm. Spreadborough, the well-known collector, to whom we are indebted for much of our present knowledge of the birds of Western Canada. They arrived at Jasper Station, July 23rd, and made camp just across the Athabaska River, about a half mile below the bridge. August 11th they moved to the bridge across Cavell Creek, which flows from the base of Mount Edith Cavell and empties into the Athabaska River some nine miles south of Jasper Station. Here they remained until August 20th, then they moved to the foot of Cavell Lake, at the head of Cavell Creek, and near the foot of Mount Edith Cavell itself. September 1st the writer joined the party. September 6th we returned to the vicinity of Jasper Station, on the bank of the Athabaska just below the junction of the Miette. Until September 6th collection of both birds and mammals was actively proceeded with, resulting in notes on 86 species and 143 specimens of 54 species, adding 30 birds to the regional list. The following are the most noteworthy additions obtained to the above cited list.

*Copies of this number may be procured from the Secretary-Treasurer, Sidney, Vancouver Island, B.C., price $1.00

The numbers attached to the species headings are in continuation of the Riley list cited above.

79. Horned Grebe, *Colymbus auritus.*

One seen September 10th on a small beaver pond about five miles south of Jasper Station.

80. California Gull, *Larus californicus* (Sp. ?).

Four large gulls, either this species or the Herring Gull, *Larus argentatus*, seen by Spreadborough flying up the Athabaska River and the Miette Valley.

81. Merganser, *Mergus americanus* (or *serrator*).

A flock of fifty July 26th and another of nearly two hundred a few days later seen by Spreadborough flying up the Athabaska and the Miette Rivers. Specific identity could not be accurately determined.

82. Ring-necked Duck, *Marila collaris.*

Scaups were seen by Spreadborough on beaver ponds in the vicinity of Jasper Station August 4th and September 10th. Specimens secured both dates are of this species.

83. Goldeneye, *Clangula clangula* (or *islandica*).

One Goldeneye seen near Jasper Station by Spreadborough July 23rd. Doubtless this species.

84. Bufflehead, *Charitonetta albeola.*

Seen by Spreadborough on beaver ponds in the vicinity of Jasper Station several times. Specimens taken August 4th and September 7th.

85. Harlequin Duck, *Histrionicus histrionicus.*

On Cavell Lake at an altitude of 5,700 feet a female and half grown young were taken by Spreadborough August 30th. Though raised on this little glacial lake the flesh of the young was so strong and fishy as to be nearly uneatable.

86. Sora Rail, *Porzana carolina.*

One reported by Spreadborough near Jasper Station.

87. American Coot, *Fulica americana.*

In all, eight were seen on beaver ponds in the vicinity of Jasper Station during the stay. During September three were taken.

88. Northern Phalarope, *Lobipes lobatus.*

A flock of four seen September 4th on the muddy flats at the head of Cavell Lake and three collected. The following day the survivor was noted there again.

89. Wilson's Snipe, *Gallinago delicata.*

Specimens seen September 8th and 10th.

Solitary Sandpiper, *Helodromas solitarius.*

Four specimens taken August 1st and 4th. One of these is without any marbling on primaries but all have heavily coloured back spottings; hence I refer to them all as does Riley, to the Western Solitary, *cinnamomeus.*

Blue Grouse, *Dendragopus obscurus.*

Franklin's Grouse, *Canachites franklini.*

As in other parts of British Columbia and the prairie provinces of Alberta and Manitoba visited by the writer this season, grouse were very scarce indeed. Accompanying this scarcity of grouse were reports of unusual numbers of Goshawks and Horned Owls the previous winter. As there is practically no shooting in the Dominion parks to reduce the number of game birds, this scarcity must, I think, be ascribed to these large raptores. There was also a general scarcity of rabbits throughout the country. Though old rabbit signs were plentiful everywhere, we did not see a single animal during our stay in Jasper Park. Without doubt the Goshawks and Horned Owls, through the failure of their usual food supply, were forced out of their accustomed winter haunts and turned their attention to the grouse as the only available substitute.

The specimens we secured of these grouse are too juvenile for subspecific determination. The specimens of *obscurus* taken by Riley were *richardsoni.*

White-tailed Ptarmigan, *Lagopus leucurus.*

Reported by Spreadborough on Fitzhugh Mountain at an elevation of 7,000 feet August 8th and again at 8,000 feet about two miles east of Mount Edith Cavell.

90. American Goshawk, *Astur atricapillus.*

We heard numerous reports of large gray hawks common in the Park the previous winter, and September 6th the dried remains of one was found on the trail down the Cavell Creek Valley. I have little doubt that the scarcity of grouse this summer was largely due to the depredations of this species.

91. Bald Eagle, *Haliaetus leucocephalus.*

One seen by the writer September 3rd at the foot of the glacier near the head of Lake Cavell. It was in juvenile plumage but passed so close that its bright yellow tarsi could be plainly seen.

92. American Hawk Owl, *Surnia ulula.*

Mr. Macoun reports having seen one August 27th.

Hairy Woodpecker, *Dryobates villosus.*

Riley reports taking the Rocky Mountain Hairy Woodpecker, *monticola*, at Jasper House. At Jasper Station we saw and collected one specimen of the species. It is an undoubted Northern Hairy, *leucomelas.*

93. American Three-toed Woodpecker, *Picoides americanus.*

Three seen near the bridge over Cavell Creek, August 17th, and two taken.

Without comparable series of these birds I am unable to subspecifically identify them. I can see little or no longitudinal back striping, but place them under *fasciatus*, the Alaska Three-toed Woodpecker, upon geographical considerations.

94. Yellow-shafted Flicker, *Colaptes auratus.*

Three specimens July 27th. These are not pure blooded birds, but show slight indications of *cafer* strain in the grayish mixture on the throat. Similarly all Red-shafted

Flickers, *C. cafer*, taken show more or less tendency towards *auratus*. On the whole the influence of *cafer* seems stronger than *auratus* in the locality.

95. Black Swift, *Cypselodies niger.*

Seen July 29th and August 6th. On the latter date two were taken.

96. Kingbird, *Tyrannus tyrannus.*

One specimen seen and obtained July 31st by Spreadborough.

97. Horned Lark, *Otocoris alpestris.*

Quite a number seen August 28th and 31st on the mountain above timber line east of Mount Edith Cavell. Five specimens were taken. I refer them to *arcticola*, the Pallid Horned Lark.

Steller's Jay, *Cyanocitta stelleri.*

One was seen at a distance September 4th near Lake Cavell but could not be subspecifically identified. Riley ascribes a bird taken on the east fork of the Moose River to the typical form, and one from Henry House to *annectens*, the Black-headed Jay.

Canada Jay, *Perisoreus canadensis.*

Common about camp near Mount Edith Cavell and observed again near Jasper Station. Five specimens taken. I can see no difference between these and specimens taken earlier in the season at Hazelton, B.C. They have rather extreme white forecrowns. The dark of the hind crown is blue-black. Some of the remaining worn plumage is of typical *capitalis aspect.* I regard them as intermediate between *canadensis* and *capitalis*, but nearer the former. If *fumifrons* is a tenable subspecies, upon which some doubt can be expressed, I should judge these birds to be nearer that form than to *canadensis.* Riley refers his birds to *canadensis.*

98 Cowbird, *Molothurus ater.*

Two young birds seen at Jasper Station by Spreadborough July 22nd.

Photo, P. A. Taverner

Photo, P. A. Taverner

THE ROCKY MOUNTAIN WHISKEY JACK
(*Perisoreus canadensis capitalis*)

99. Rusty Blackbird, *Euphagus carolinus.*

Two seen and taken near Jasper Station July 28th.

100. American Crossbill, *Loxia curvirostra.*

Reported by Spreadborough to have been common near Jasper Station during the first camp there July 23rd to August 11th. Specimens taken July 30th and August 7th. They appeared to be feeding on woolly aphis from the spruce trees. No seeds were found in any of their stomachs.

101. Lapland Longspur, *Calcarius lapponicus.*

One specimen taken by Spreadborough August 31st near Mount Edith Cavell at an elevation of 8,000 feet.

Savannah Sparrow, *Passerculus sandwichensis.*

On the marshy delta 5,600 feet elevation at the head of Lake Cavell were quite a number of Savannah Sparrows, but so wild that specimens could only be taken with difficulty. In the vicinity of Jasper Station, after September 6th, a few were seen and taken. There are two types of coloration present amongst these specimens—a white eyebrowed and a yellow eyebrowed type. Until this species is thoroughly revised I do not care to make subspecific determination of them.

Song Sparrow, *Melospiza melodia.*

Similarly to Riley's experience, we found Song Sparrows rather scarce in the Park, only meeting scattered individuals in the shrubbery of a few of the beaver ponds, where they were very difficult to collect or to retrieve when collected and we only obtained two specimens. July 26th and September 10th, the former being a probable breeder, while the latter may be a migrant. In neither can I seen the characters described by Riley as characteristic of his new form, the Yellowhead Song Sparrow, *inexpecta,* of which these are topotypes. They come closer to a series from Trail, B.C., identified by Oberholser as *merrilli,* than to another series from Huntington, identified by the same authority as *rufina*

and *morphna*, which can be regarded as synonymous. Personally, I am inclined to lump most of our British Columbia Song Sparrows, including these, under the head of *rufina*, the Sooty Song Sparrow.

102. Tree Swallow, *Iridoprogne bicolor.*

Several seen by Spreadborough July 25th near Jasper Station, when one was taken.

103. Cedarbird, *Bombycilla cedrorum.*

Common about Jasper Station, along the river and at all beaver ponds from July 25th to August 8th. Several specimens taken.

Orange-crowned Warbler, *Vermivora celata.*

Occasional specimens seen about both Jasper Station and Mount Edith Cavell. A specimen was taken in each locality. One, an adult female, July 25th from Jasper Station, is intermediate between *celata* and *orestera* in colouration, but its wing measurement throws it well into *celata*. The other juvenile male, Mount Edith Cavell September 6th, while intermediate in colour is by size extreme *orestera*. Any one that cares to make subspecific determination under these conditions may do so; Riley ascribes his specimens to *celata*.

104. Tennessee Warbler, *Vermivora peregrina.*

One female taken July 20th near Jasper Station.

105. Audubon's Warbler, *Dendroica auduboni.*

Reported by Spreadborough as fairly common in Jasper Park throughout his stay. Amongst the Myrtle Warblers taken at the camp on Lake Cavell were several, showing indications of the Yellow-throat of this species and some whose specific determination was less evident. Four specimens taken between August 1st and September 8th.

106. Townsend's Warbler, *Dendroica townsendi.*

One Townsend's Warbler was taken as we left the Edith Cavell Mountain camp September 6th and another seen in the vicinity of Jasper Station the 8th.

107. Maryland Yellow-throat, *Geothlypsis trichas.*

Two seen by Spreadborough, July 23rd; none taken.

108. Townsend's Solitaire, *Myadestes townsendi.*

Two were seen by Spreadborough near the Edith Cavell camp and noted again about Jasper Station. In all, about fifteen were seen or taken during our stay in the Park.

SOME NOTES ON THE MAMMALS OF JASPER PARK, ALBERTA

By Rudolph Martin Anderson

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The following list is based upon a collection of fifty-nine specimens, representing sixteen species and subspecies of mammals, made by Mr. William Spreadborough for the Geological Survey of Canada, in Jasper Park, Alberta, from July 23rd to September 13th, 1917. Additional notes are also given on four species not represented in the collection. This collection and the accompanying field notes add some interesting supplementary data to Mr. N. Hollister's list of "Mammals of the Alpine Club Expedition to the Mount Robson Region,"* as considerable time was spent in districts of the Park that were not worked by the Alpine Club expedition.

1. Masked Shrew, *Sorex personatus personatus* I. Geoff. One male specimen, taken August 17th, at mouth of Cavell Creek, altitude 4,000 feet, is referable to *S. p. personatus* both by skull and measurements; a very much smaller animal than the Dusky or Mountain Shrew. This specimen measured: Total length, 88 mm.; tail vertebrae, 38; hindfoot, 12.

2. Mountain Shrew, *Sorex obscurus obscurus* Merriam. One male, adult, typical, taken August 17th, at mouth of Cavell Creek, altitude 4,000 feet. It measured: Total length, 114 mm.; tail vertebrae, 50; hindfoot, 12.

*Hollister, N. Mammals of the Alpine Club Expedition to the Mount Robson region, pp. 1-44. Canadian Alpine Journal (special number), published by the Alpine Club of Canada, 1912. Printed by Stovel Co., Winnipeg, Man. Copies of special number can be had on application to S. H. Mitchell, Secretary-Treasurer, Alpine Club of Canada, Sidney, Vancouver Island, B.C. Price $1.00.

3. Black Bear, *Ursus americanus* Pallas.

"Common at Jasper Park" (Spreadborough).

4. Bonaparte's Weasel, *Mustela cicognanii cicognanii* Bonaparte.

Three specimens taken; male, July 28th to 31st, near Jasper Station; male, August 31st; and male, September 2nd, at head of Cavell Creek, altitude 5,700 feet. The first specimen seems to differ from the others only in greater paleness of colour; the early summer fur is also thinner. Averages and extreme in measurements of three specimens are as follows: Total length, 299 mm. (289-310); tail vertebrae, 84.6 (82-88); hindfoot, 38.6 (37-41).

5. Rocky Mountain Pika, *Ochotona princeps* (Richardson).

Three specimens taken, one male and two females, August 12th, near mouth of Cavell Creek. Measurements: Total length: male, 184 mm.; female, 177, 184; hindfoot, male 34, female 31, 31. "I saw signs of the Pika in nearly all the rock slides from the Athabaska River at Jasper to above timber line. They store away a great quantity of grass and plants for winter use" (Spreadborough).

6. Northern Deermouse, *Peromyscus maniculatus borealis* Mearns.

Two specimens, male, August 2nd, near Jasper Station; female, August 17th, near mouth of Cavell Creek, altitude about 4,000 feet; closely resemble the ordinary type of *borealis* from northern and western Alberta. Measurements: Total length, male 165 mm.; female 172; tail vertebrae, male 88, female 82; hindfoot, male 22, female 19.

7. Bushy-tailed Wood Rat, *Neotoma cinerea drummondii* (Richardson).

Three specimens, male, juvenile, July 27th, near Jasper Station; male, adult, August 16th; female, adult, August 17th, near mouth of Cavell Creek, altitude about 4,000

feet, are typical *drummondii*. "Very abundant in rock slides near Jasper, Jasper Park" (Spreadborough).

8. British Columbia Red-backed Vole, *Evotomys gapperi saturatus* Rhoads.

One specimen taken, male, adult, September 5th, at Lake Cavell, altitude about 5,700 feet, is very little lighter in colour than specimens from Hazelton (head of Skeena River, B.C.), but are much darker than specimens of the Athabaska Red-backed Vole (*E.g. athabascæ* Preble) from points farther east in Alberta, and should undoubtedly be placed with the western specimens. It measured: Total length, 139 mm.; tail vertebrae, 45; hindfoot, 19.

9. Drummond's Vole, *Microtus drummondii* (Audubon and Bachman).

Nineteen specimens were taken in Jasper Park: Four from near Jasper Station, one female August 1st, three females August 2nd. Fifteen from camp at mouth of Cavell Creek, altitude about 4,000 feet, two males and five females, August 14th; one female, August 15th; three males and two females, August 16th; two males, August 18th. Although showing considerable variation in age and size, all seem to be referable to *M. drummondii*. Averages and extreme in measurements of nineteen specimens are as follows: Total length, 129.5 mm. (108-159); tail vertebrae, 36.8 (31-44); hindfoot, 19 (19-19). Mr. Spreadborough states that these meadow voles were very abundant in Jasper Park in wet meadows. No specimens of *Microtus* were taken at the camps at the head of Cavell Creek, altitude 5,700 feet, from August 11th to 20th, nor at the junction of the Miette River with the Athabaska, September 6th to 12th.

10. Northwest Muskrat, *Ondatra zibethica spatulata* (Osgood).

One specimen, female, adult, Jasper Park. "To be found in most of the ponds near Jasper" (Spreadborough).

11. Yellow-haired Porcupine, *Erethizon epixanthum epixanthum* Brandt.

"Fairly common near Jasper, living in rock slides and caves. One evening one walked right into camp and I killed it with a club" (Spreadborough).

12. Rocky Mountain Marmot, *Marmota sibila* Hollister.

Five specimens taken, near head of Cavell Creek, altitude about 5,700 feet: Male, adult, August 22nd; male and female, juveniles, August 28th; female, adult, and male, juvenile, August 31st. The adult male, No. 3255, mammal collection, Victoria Memorial Museum, has the skull much larger than the maximum measurements given for the species by Hollister, and much larger than any skulls in a large series in the Victoria Memorial Museum, representing various races of the *Marmota caligata* group, including specimens of *M. c. oxytona*, *okanagana*, *nivaria*, and *cascadensis*. This male skull measured: Condylobasal length, 106 mm.; palatal length, 55; postpalatal length, 43; zygomatic breadth, 69; length of nasals, 43; alveolar length of upper tooth row, 23; alveolar length of mandibular tooth row, 19. Mr. Spreadborough's measurements of the two adult specimens in the flesh were as follows: Male (No. 3255), total length, 736 mm.; tail vertebrae, 105; hindfoot, 185. Female (No. 3267), total length, 736; tail vertebrae, 98; hindfoot, 228. "Common along the foot of Mount Edith Cavell, also above timber line just east of the Mount" (Spreadborough).

13. Columbian Ground Squirrel, *Citellus columbianus* (Ord).

Six specimens taken, near head of Cavell Creek, between 8,000 and 8,300 feet altitude: Female, juvenile, one male and two females, adult, August 28th; one female, adult, and one male, juvenile, August 31st. These specimens appear to be identical in characters with specimens from Banff, Crow's Nest Pass, and Mt. Forgetmenot, Alberta, and from Fernie, Arrow Lake,

Cascade, and Midway, B.C. "Saw a great number of them on the alp-land just east of Mt. Edith Cavell" (Spreadborough). Averages and extreme in measurements of four adult specimens are as follows: Total length, 311.7 mm. (286-329); tail vertebrae, 68.5 (57-88); hindfoot, 48 (45-50).

14. Northern Chipmunk, *Eutamias quadrivittatus borealis* (Allen).

Two specimens, both males, taken August 1st and August 2nd, near Jasper Station, are clearly referable to *borealis*. These specimens measured as follows: Total length, 178, 194 mm.; tail vertebrae, 76, 91; hindfoot, 31, 44. "Fairly common at Jasper" (Spreadborough).

15. Canadian Mountain Chipmunk, *Eutamias ludibundus* Hollister.

One Chipmunk, taken further west at a higher altitude than the preceding specimens (of *E. q. borealis*), is much larger, and shows the typical characters of the recently described species, *E. ludibundus*. Male, adult, taken September 8th, at mouth of Miette River (junction with the Athabaska River), altitude about 3,450 feet. Measurements: Total length, 203 mm.; tail vertebrae, 89; hindfoot, 31.

16. Northern Mantled Spermophile, *Callospermophilus lateralis tescorum* Hollister.

Five specimens taken; male, adult, August 8th, near Jasper Station; male, adult, and female, juvenile, August 24th; female, juvenile, August 31st; and male, juvenile, September 5th, near head of Cavell Creek. "I saw and took most of them above timber line, and as high as 8,000 feet, but I secured one at Lake Edith Cavell, altitude 5,700 feet" (Spreadborough).

17. Hudson Bay Red Squirrel, *Sciurus hudsonicus hudsonicus* (Erxleben).

Five specimens taken; female, July 28th; two females, July 31st; male, August 2nd; female, August 3rd; taken

near Jasper Station, are all referable to *S. h. hudsonicus*. "Abundant in the woods along the Athabaska River, Jasper Park" (Spreadborough).

18. Canadian Beaver, *Castor canadensis canadensis* Kuhl.

The beavers of the park probably belong to this variety, although no specimens were taken. "They are becoming very abundant in Jasper Park. One small stream that flows into the Athabaska about a mile south of Jasper has four large dams on it and a number of small ones. There are several in Horseshoe Lake that are so tame that they will come out of the lake and cut down trees while one is watching them" (Spreadborough).

19. Mule Deer, *Odocoileus hemionus hemionus* (Rafinesque).

No specimens were taken, but Mr. Spreadborough states that "they are common in Jasper Park."

20. Rocky Mountain Caribou, *Rangifer fortidens* Hollister.

One specimen, male, adult, taken August 24th, at Mount Edith Cavell. On that date Mr. Spreadborough saw two big bulls at one time, and another one the same day, on snow patches on the alp-land just east of Mount Edith Cavell. He states that there seemed to be none but bulls on that mountain; no small tracks were seen, and he thought that there were not more than four in all. The specimen taken, a fine large bull, was killed with a shotgun.

MOTION OF THE YOHO GLACIER
1916—1917

By Arthur O. Wheeler

On the 24th July, 1916, it was found that all the metal plates previously set in line across the ice tongue of the Yoho Glacier had disappeared in crevasses and, on the same date, a new line of plates was set out.

July 30th and 31st, 1917, observations were made to ascertain the rate of flow of the ice and the amount of recession for the past year.

Rate of Flow

All the plates set out on the 24th July, 1916, were found, and instrumental readings taken upon them from both ends of the base used for such purpose, in order to ascertain the extent of their movement for the elapsed interval.

Table showing the Motion of Plates set on the Yoho Glacier between 24th July, 1916, and 30th July, 1917=371 days

Plate	No. 1	No. 2	No. 3	No. 4
Total motion	87 ft.	114 ft.	104 ft.	79 ft.
Daily motion	2.81 in.	3.69 in.	3.36 in.	2.55 in.

For Advance or Retreat

Measurements were made from Rocks Nos. 1 and 2 on the left side of the stream and from the Sherzer Rock on the right side. The results are tabulated below.

Table showing Measurements to Nearest Ice

Year	From Rock No. 1 left side of stream	From Rock No. 2 left side of stream	From Sherzer Rock right side of stream
1914	277.6 ft.	313.0 ft.	222.7 ft.
1916	413.0 ft.	449.0 ft.	247.0 ft.
1917	454.5 ft.	483.5 ft.	250.0 ft.

1914–1917, Average Retreat of ice forefoot=124.9 feet in three years.

Photo, A. O. Wheeler

ILLUSTRATION No. 1

Ice Forefoot of Yoho Glacier from Station E

Photo, A. O. Wheeler

ILLUSTRATION No. 2

From View Point 79.3 Feet South of Rock No. 1, 1917

It is interesting to note that the entire average retreat of the ice forefoot since measurements were first made on the 15th July, 1916, has been 349 feet.

Annual Change in Formation of Ice Forefoot

The customary photographs were taken from Station E, situated where the trail comes out of the forest on the right moraine of the glacier, and from Rocks Nos. 1 and 2 on the left side of the stream. (See map opposite page 274, Canadian Alpine Journal, 1908, Vol. 1, No. 2.)

The view from Station E shows a still further shrinkage of the ice. With the exception of one narrow point, where there is an ice bridge across it on the left side of the icefall, the stream from Balfour Pass (Waves Creek) now flows clear of the ice and, where the bridge has gone, it will be a difficult matter to cross in order to continue the observations. Moreover, the smooth part of the ice tongue, where the line of plates is set, has become so broken by crevasses that its usefulness for setting out plates will be a thing of the past. Above the smooth portion the icefall rises in towering séracs.

The stream (Waves Creek), which has heretofore flowed in under the ice tongue at the east side and, when joined by the additional flow under the main body of the ice, come out at the snout as Yoho River, has been the main cause of the beautiful ice cave for which the glacier has been so justly famous. It is greatly feared that, now the ice has receded beyond Waves Creek, the cave will not be formed and will cease to exist.

Illustrations Nos. 1 and 2 are from photographs identical with those taken in previous years, appearing in the various issues of the Canadian Alpine Journal, and a comparison will show the steady retreat of the ice. Whereas in 1906 the ice was only 107 feet distant from the point at which Illustration No. 2 was taken, it is now 534 feet distant, a maximum retreat of 427 feet in eleven years.

When setting out a new line of plates in July, 1917, one of the old lot of plates that could not be found in 1916 was discovered on the ice forefoot about a hundred yards above where the plates are usually set in line. It is surmised that some aspiring tourist had made a wonderful discovery when on the icefall and, to celebrate it, had started to place the treasure trove on the pinnacle of a huge sérac close by, but, finding the work laborious, had left it unfinished.

It may be, however, that a bear had carried it to where it was found, for bears are curious animals, and I have known them to carry articles left where in use to points at a considerable distance. On one occasion, when making the Yoho Glacier observations, I saw a bear come on the ice and climb to the top of a high sérac, evidently on its way across the ice; however, having arrived at this high point of vantage, he thought better of it and went back to the side from which he started.

As ice, like water, flows down hill, it must have been some such agency that carried the missing plate up stream to where it was found.

MISCELLANEOUS SECTION

A WINTER JOURNEY TO MT. SIR ALEXANDER AND THE WAPITI

By Mary L. Jobe

The early winter of 1917 my desire to make a winter trip through the northern Canadian Rockies was realized. I was fortunate in being able to combine my trip with Mr. Donald Phillips' business of taking in supplies for a scientific expedition to the Wapiti River, under the auspices of the Smithsonian Institution. Not only had he been the chief factor in my expeditions of 1914 and 1915 to Mt. Sir Alexander, but I considered his knowledge of the northern wilderness absolutely essential to success and safety in travel. The few trails beyond Mt. Bess and Mt. Chown are for the most part those which Phillips himself has made during the past four years. So slight an impression had our pack trains left in 1914 and in 1915 as they travelled over dry heather slopes or rock ridges, that even a skilled guide unfamiliar with the region would have found it almost impossible to follow our former route.

Our general line of travel into the North Country may be described as follows: Starting at Robson Pass, the route lay north down the valley of the Big Smoky, beyond the mouth of Wolverine Creek to the mouth of Glacier Creek ("Bess Creek," Collie and Mumm); thence up this creek, across Bess Pass, Bess Shoulder, and Jackpine Pass; from the valley of the Main Jackpine to the Middle Jackpine, and thence direct to the West Jack-

pine. From this river we varied our route from that previously travelled. Thereafter it led along the head waters of the Fraser Smoky and the Muddy Water River to Sheep Creek Pass and thence to the Porcupine. Skirting the head waters of Providence Creek, we approached Mt. Sir Alexander from the northeast. From here we travelled north to the Porcupine, and from that point crossed a pass to the Wapiti. Returning by way of this last pass, we travelled northeast to the main Porcupine, where we struck the old Grande Prairie trail, and at the same time the foot-hills, crossed to Copton Creek, followed Sheep Creek to its junction with the Big Smoky, and travelled two days up the Big Smoky Valley to Evan Moberly's ford, where we crossed, and thence to Grande Cache Lakes. From this point we followed the government trail to the Muskeg, Big Baptiste, Little Baptiste, and Hay River to Entrance, a little station on the Grand Trunk line, sixty miles east of Jasper. Our route may be roughly described as extending along the one short and two long sides of a rhomboid. On the outgoing trip we crossed twelve high summits or passes, ranging in elevation from 5,000 to 8,100 feet, while on the return trip we crossed nine of lower elevation. The distance by trail in such a journey is always extremely hard to gauge, but we estimated it at approximately four hundred miles.

From the time our outfit of ten pack horses and three saddle horses left Robson Station on the tenth of October until, three days later, we reached camp northwest of Mt. Bess, we had frequent signs of approaching winter. Beautiful sunshine was followed at Robson Pass by a night of brilliant aurora, and the next day by sleet and rain. The night of the succeeding day, the rain fell in a downpour and as the storm continued the next morning, we were unable to break camp. Phillips had an assistant, Jack Hargreaves, a strong, manly young fellow, willing in every emergency, and always good tempered. I have

rarely had a more unselfish companion on the trail. Up to this time we had not pitched any tents, but at night each had appropriated a big spruce tree. Here it was necessary to pitch the tepee, which furnished a common habitation during the day, protected the grub and sheltered the men at night, while my own sleeping quarters during bad weather consisted of a little silk wickiup. It excluded most of the rain and snow, and, on the stormiest evenings, my big fire in front made it more comfortable than the tepee. During the coldest nights, with the temperature frequently below zero, my Alaskan eider-down bed kept me snug and warm. I considered my wickiup superior to a tent, for it allowed me every night to look out upon a vast world of forest and mountain and sky. I shall never forget my view of Mt. Bess from this little camp, when after thirty-six hours of steady downpour, the rain turned to snow. The brilliant white peak was still visible against a gray sky, while the snow storm fell like a sudden, heavy April shower. In this setting Mt. Bess looked higher and more impressive than when we had climbed it in 1915.

Now, the one thing which Phillips dreaded more than anything else was an early and deep snowfall. With his knowledge of winter conditions in the mountains, he well knew how difficult it would be to take our heavily packed outfit through snow into the interior, across many high passes and dangerous summits. He also realized the danger of being snowed in.

Heretofore we had been making long drives at good speed, from Robson Station to Robson Pass in less than six hours, and from Bess Pass to Bess Shoulder—a climb of 1,500 feet—in forty minutes; but this light snowfall now began to retard our progress.

Eager to secure some snow pictures and enjoy the fine scenery in the early morning light, I crossed Jackpine Pass in advance of the outfit. Early as I was, a big black wolf had crossed ahead of me. His tracks, easily

six inches in diameter, seemed identical with those of a monster wolf that had followed us across the pass in 1914. Beyond the summit I waited for the pack train and we made the 1900-foot descent with all the old-time excitement. The cayuses, balanced in mid-air, seemingly plunged into space, somehow regained their footing, and then repeated the process. It is always spectacular.

The next few days found us fording and re-fording the winding Jackpine, sometimes in a blizzard, sometimes in sunshine; thawing out our frozen pack-mantles and lash ropes every morning; crossing the Middle Fork, where Phillips had to tear out a large frozen beaver dam in order to make the stream fordable; travelling through ever deepening snow across the high summit and down the precipitous descent to the West Branch, from which we climbed to the most formidable summit on our journey—a summit 8,100 feet in altitude that separates Big Smoky waters from the Fraser Smoky, on the British Columbia side.

We now faced squarely one of the most thrilling and spectacular events on the trip. It was four in the afternoon when we reached the West Branch and picked up the cache left by Phillips a few weeks previous on his return from his fall hunting trip. Now the elevation at the river is 5,000 feet, which meant that we had a climb of 3,000 feet ahead of us, with a descent to tree line on the other side before we could camp for the night. When a short distance above the river, daylight began to wane. We pushed on through ever-deepening snow for an hour and a half and had struck steep going above the last scrub, when Blue, a pack horse that had been working very little all summer, suddenly played out completely. The whole pack train was compelled to halt while the men put Blue's pack on Jack's saddle horse. Though freed from his load, Blue refused to climb up the mountain side, without the most ardent urging. "It's the first time I ever had to pull a cayuse up-hill backwards,"

Photo, Mary L. Jobe

I CROSSED JACK PINE PASS IN ADVANCE OF THE OUTFIT

Photo, Mary L. Jobe

MOUNTAINS AT THE HEAD OF PORCUPINE RIVER

Near Mt. Sir Alexander

declared Jack in disgust. I was travelling in the middle of the outfit and each time I looked back Blue was off the trail, angling off to a sheltering rock and Jack after him. At a little after six o'clock darkness and a big snow squall swooped down upon us simultaneously. The snow was every where knee-deep and sometimes I plunged through drifts nearly to my waist. If the horses had not broken out the trail, I could not have made a rod of headway. How Phillips was faring on ahead, I could only vaguely surmise.

The darkness was now intense in the fast falling snow. I had tied up the halter shank on my saddle horse some time before, as in making the steep ascent he had plunged so violently through the drifts that I feared he would strike me. He had gone on somewhere ahead and was now lost to sight in the storm. In fact, I could only dimly discern two or three horses ahead — Phillips shouted back occasionally to give us our bearings, but his voice sounded faint and far away as the tempest warred about us. It grew bitterly cold; my clothing was so saturated with snow that the instant the pack train halted my hands and feet became numb. Finally, when only a few hundred feet below the crest of the ridge, it became necessary for Phillips to tie Blue to the tail of his saddle horse. Thereafter poor old Roanoke literally dragged Blue up the mountain side. While Blue was thus being cared for, I was glad enough to find my saddle horse, and pull my mackinaw coat on over my snow encrusted shirt. A short distance above, a break in the snow clouds showed us the long, level summit. Here I quite shamelessly climbed on my horse and let him carry me a few rods. It was now 8.30 and I was weak from hunger, having eaten only two oatmeal crackers and a few prunes in the thirteen hours since breakfast.

My joy ride soon came to an end, however, and again in the midst of a veritable blanket of snow we began to descend. I was now travelling next Phillips. Suddenly

I saw him stop, disappear and then reappearing swerve violently to the right. Afterwards he told us he had stepped through a snow cornice, had suddenly found himself dangling in space, and had been saved by Roanoke's deliberately pulling back on the halter shank and steadying him until he could recover his footing. The peril of travelling along this narrow summit was only too obvious; there was now nothing to do but wait for a break in the clouds. It came finally but fitfully, and Phillips realizing the danger of attempting the steep descent into the valley of the Fraser Smoky, turned toward the south and slowly and cautiously led us down through a maze of cliffs and gullies toward tree line on the Jackpine side.

Every few minutes the clouds, with increasing intensity, shut down upon us. What looked like a straight stretch of snow time after time proved to be a perpendicular drop. Again and again I fell headlong in the darkness, and Jack, nearby, hearing a thud and my sudden, spasmodic gasp, would stop and patiently enquire if I were still alive and coming.

We were all very much alive, and it was a somewhat excited party that made camp that night at 10.30 just below tree line on the steepest side-hill I had ever camped on. We had been travelling eighteen hours. I kept a big fire of dry spruce boughs blazing while our men unpacked. When I turned the horses loose, it was so cold the halter snaps froze to my fingers and I had to shake them loose.

The morning was cloudless. We now looked with wholesome awe upon the cliffs among which Phillips had led us in safety in our descent. We again climbed through snow over 2,000 feet to the summit, now a sheet of ice-encrusted snow, where with the greatest difficulty both man and beast kept a footing on the traverse of the main ridge and in the descent to the Fraser Smoky Valley. In many places the mountain side afforded only a narrow footing and was covered with an icy coating. Phillips

kicked out steps and his well-trained cayuses followed without mishap. Below us the snow everywhere lay deep in the valley, and that night we worked long and laboriously shovelling out the snow for our camp ground. Winter in the Big North had come.

We were all wearing heavy mackinaw shirts and knickerbockers, and as long as we could have dry underclothing at night and dry socks there was little else to be desired. We had also donned our oil-tan shoepacks, fitted with an excellent brake of Phillips' invention. It is made of trap chain and when on a slippery surface is as secure as a spiked boot.

In another snow storm the next day we made the ascent of a 7,300-foot summit. Our course was in a network of cornices and up and down narrow ridges, where the horses had only a precarious footing. The snow was so deep it showed blue in all the crevasses and in the deep imprints of the horses' feet. The horses slipped and slid continually. Pet, my saddle horse, pulled me down again and again. In many of the drifts the snow was waist deep. As we reached the pass to the Muddy the sun for a moment illuminated the great treeless expanse in which the two large branches of the Muddy Water River are born. The main streams flow easterly to the Big Smoky. The storm began again as we shovelled out the deep snow for our camp site that night on the southerly branch.

For the next nine days we travelled north. At Sheep Creek Pass, where we had a foot of snow fall in one hour, our real fight began. We made barely one mile an hour. Across the three long miles of Surprise Pass, 7,000 feet in altitude, we battled for every foot. It was the pass in which Phillips had anticipated the worst going. The drifts were terrible; a freezing north wind benumbed us, and a howling blizzard enveloped us. For the first time on the trip, I wondered whether we "could make the grade." But we did, though how Phillips ever led us in

safety through that labyrinth is a marvel to me. "I can go across Surprise Pass blindfolded," he had said. It was literally true: he had crossed the pass before.

Since leaving the Jackpine, Phillips had not sat in his saddle, but had broken trail unceasingly. Across the long pass to the Porcupine, I now begged to go ahead on my horse, for I remembered this part of the country well. Old Pet now did valiant service. He broke out trail through drifts shoulder deep and for two hours relieved Phillips of his almost superhuman exertion.

The night of October 23rd we reached camp near Mariel Lake and about ten miles from the base of Mt. Sir Alexander. The next morning the snow was knee deep even on the flats and it was snowing so heavily it seemed inexpedient to move. The hours of daylight had now visibly decreased; at best we had little more than eight. It was frequently noon before we could thaw out our solidly frozen pack mantles, hackamores and halter shanks, pack up, and actually hit the trail; it was almost always dark, and repeatedly long after dark when we made camp.

Each day as we had gradually approached Mt. Sir Alexander, I had found myself more and more eager to see the giant peak in winter dress, and yet fully aware that considering the weather the chances were all against me. A few miles beyond our camp we would be in range for our only possible view. Latterly, if we had had any clear weather at all, it had usually occurred between twelve and two o'clock. At 1.30 we reached a small lake, north of the peak from which we had obtained a magnificent view in 1915. To my keen joy, the great snow mass was easily distinguishable. The clouds hung about the peak, as they usually do, even in fair weather, but its icy bulk shone roseate above a dark blue cloud bank, as this lone sentinel of the North caught the rays of a slowly sinking sun. Everywhere about us the winter's snow reflected the splendor of the mountain

itself. For a brief moment the whole landscape was flooded with celestial colour and the heart of at least one mortal who stood and gazed was athrill at the beauty of the scene. In half an hour the sun had vanished. Fortunate, indeed, had we been to have "Kitchi the Great" reveal himself to us. It was worth travelling to the ends of the earth to see.

That night on the Porcupine we made camp in a grassy spot under a clump of spruce. It was the first time my feet had stood on dry ground since we left the Jackpine. I slept without any shelter save that of a big spruce, but the next morning I found my "tarp" well covered with snow. I had had visitors in the night—marten tracks were thick in the snow about me.

Near Jarvis Pass we left our old route to the northwest and continued through burnt timber to the north, across Wapiti Pass. Ever since picking up a cache on Sheep Creek both men had packed their saddle horses, and now Phillips was breaking out trail in knee-deep snow, and in the face of a biting sleet storm. It cleared that evening and at five o'clock the moon was bright in the sky as we made camp. Later we heard a moose snorting near camp and the next morning, while searching for the horses, Jack followed a deep trail of fresh moose tracks a long way, thinking they were the cayuses' tracks. Evidently many visitors had inspected camp in the night time.

Once across the Wapiti Pass we found ourselves in a veritable den of wolves. Their tracks were everywhere. They came near our camps and howled so dismally in the night-time, that we did not hesitate to burn fuel lavishly; in broad daylight the morning we were breaking our ten days' camp on the Wapiti, they became so inquisitive and so vocal that they almost stampeded our outfit; and once, as we were moving our pack train at twilight along the Wapiti River, two black monsters crossed in front of us and stood in the timber a few yards away yelping and whining like hungry curs. They are

vicious beasts and are afraid of nothing smaller than a grizzly.

For three days we had bad going down the narrow valley of the Wapiti. We forded continually and as the stream was partially frozen, the horses constantly broke through the ice. In order to avoid a deep canyon, Phillips had to cut a trail up the mountain side, and that night we travelled for three hours in the dark looking for a suitable camp site. As it happened, we camped under a few scattered jack pines on the edge of a muskeg, the only dry level spot available.

At the end of our fourteenth day of snowstorm, and eighteen days after leaving Mt. Robson, we reached our final destination on the Wapiti, where in a spruce forest Phillips built a fine cabin for his supplies. There is no space here to tell of our return journey. I want merely to mention the splendid waterfall we explored on the Porcupine. Only a few white men have seen it, and so far as I know, no other white woman has been in that locality. The water falls in two great streams from a height of 225 feet into a gigantic dark green pool, below which rapids rush through a canyon six miles long. Behind the falls is a great ice cavern, into which one may walk dry shod save for the blowing spray. With their fine background of forested and snow-capped mountains, and their adjacent banks, lined with hoodoos, the Falls of the Porcupine present a spectacle never to be forgotten. Several falls of lesser magnitude are in the canyon.

On the return trip near Wapiti Pass we had one brief glimpse of Mt. Ida, but thereafter, unwilling to battle longer with the deep snows, we travelled only in the foot-hills, along the route previously described. On the Wapiti and subsequently we had plenty of zero weather, and two nights before Christmas, when we turned our horses out on their winter range in the Athabaska Valley, the mercury fell to 54 degrees below zero. At no

Photo, Mary L. Jobe

THE MOUNTAIN SIDE LEADING TO THE FRASER SMOKY WATERSHED
Was Covered by an Icy Coating

Photo, Mary L. Jobe

FORDING THE WAPITI
The Horses Constantly Broke Through the Ice

Photo, Mary L. Jobe

IN THE ATHABASKA VALLEY
Two nights before Christmas we experienced 54° below Zero

time, however, on the trip, did I suffer from cold, and so joyous and happy was I in the new experiences of winter travel, that I welcomed each hardship—and they were really few—as a part of our "great adventure."

AN ARTIST'S REMINISCENCES

By F. M. Bell-Smith

Having been asked to tell something of my experiences while sketching in the Canadian Rockies, I approach the task with some hesitancy, realizing, as I do, that the most valuable memories that I carry are those that can best be told on canvas, and which I could never express in mere words. Then, the things I could tell might ill compare with the thrilling stories furnished by the mountaineers and alpinists of their daring and life-risking ascents. But there are a few rather unusual experiences, the memory of which comes to me out of a bewildering confusion of happenings incidental to sixteen summers spent in the Rockies and the Selkirks which may at least prove amusing if not astonishing.

I could fill pages with the details of such little incidents as the sudden and unannounced appearance of a huge bear within a few feet of me while I sat sketching Mount Sir Donald; of how, at another time, in rapidly descending the slopes of Mount Abbott I plunged into a thick cluster of "Devil's Club," with results that I will not stop to describe; neither will I even refer to a number of hairbreadth escapes of one kind and another, for these are things so common to the life of the mountain climber that their relation would probably fall flat.

I first saw the mountains in July, 1887, and the first impression lives with me to-day. I had arrived at Banff in cloudy weather with no mountains visible, but while sketching a bit of the Bow River the clouds lifted, and Cascade Mountain with its crags and gullies white with fresh snow appeared as I have never again seen it, and my sketch provoked the remark from Mr. L. R. O'Brien, president of the Royal Canadian Academy of Arts, that

Photo, F. M. Bell-Smith

SKETCHING FROM HORSEBACK WHILE ON THE TRAIL

it was the first time that he had seen "Cascade" look interesting. Two years later I had the unique experience of going from Montreal to Vancouver and back again to Montreal without seeing a single mountain, owing to dense smoke from forest fires. Arrived at Montreal I renewed my passes and again returned to Banff, having made the journey three times in as many weeks.

In the year 1888, while staying at Glacier House, I was invited by the Rev. W. S. Green to accompany him and the Rev. Henry Swanzy on a visit to Corbin's Mine. As this promised something new, I gladly accepted the kind invitation, in spite of some misgivings as to my ability to keep up with such climbers on the ascent of four thousand feet. When we arrived at Illecillewaet, from which point the trail started, I found horses all ready, and the sight filled me with a new sensation of which, however, I was careful not to betray any visible sign. *I had never ridden a horse in my life.* I felt sure that I could not get into the saddle without making such an exhibition, as would expose me to general laughter. But to my astonishment I got on better than I expected, for by watching very closely the others mount, and doing as nearly as I could like them, I was in the saddle before I realized it, and what was equally surprising, nobody looked at me or took any notice.

We started, and the trail led through thick forest for over two hours without anything to see, and I began to wonder if I should have felt any more tired if I had walked. But I was afraid to dismount as some did for a rest and change, being far from sure that on a steep trail I could get on again as easily as I had done at the start. At length we reached tree line, and soon commenced to cross a very steep slope; so steep that I had difficulty in keeping my left foot from striking the bank, while on my right it seemed as though I could look straight down. No doubt this was an exaggerated impression, but Mr. Corbin seemed to consider this a sort of "*test*"

place, for turning to me—he being the leader, and I second in the line—he told me of people who had been over this spot who shut their eyes and clasped their horse round the neck in terror, and he seemed rather surprised when he noticed that I was unconcernedly looking at the river four thousand feet below.

He then asked me if I had observed the fact of my horse having only one eye, and proceeded to give me a minute account of how he lost it. He explained that between my beast—a sort of Cayuse with an evil look in his one eye—and the mule he was riding there existed a strong rivalry for the lead; and that on one occasion when they were at the *exact spot to which we were then coming* my animal attempted to pass the mule, and rolled down over a thousand feet, escaping with the loss of one eye.

I need scarcely say that I was deeply impressed by this story, and was glad enough when we passed the place.

The mine being about sixteen hundred feet down on the other side of the pass, we all dismounted and rested long enough for me to make a sketch before we descended to the mine, where we found dinner awaiting us.

After dinner we lined up on the trail in the same order, and I was standing beside my beast awaiting the signal to mount, when, without a moment's warning, my brute made a sudden dash past the mule taking the *inside* of the trail, and in doing so pushed the other beast off the path, and down into the valley he would have rolled, but for a tree against which he struck. There was nothing for it but to catch my horse, and a time I had doing so, but having finally caught him and being once more on his back, I was quite content to let him take the lead, and we did so, and kept it all the way down.

That evening after supper, Mr. Corbin was good enough to volunteer some rather complimentary remarks upon my "*horsemanship*" and, when I very modestly admitted that I had never ridden on any animal with four

legs in my life until that day, I am convinced that he considered me to be either a joker or a liar.

The scenery in the neighborhood of the Glacier House has always appealed to me as the most varied and interesting that I have visited, which may account for the fact that I have spent more time there than at any of the other hotels in the mountains.

It was while stopping there in 1899 that I secured the studies for my painting, "The Heart of the Selkirks." The point of view is known as "Avalanche Crest," said to be three thousand or more feet above the hotel and reached by a good trail for about three-quarters of the distance, after which it is a bit of a scramble up a steep slippery grassy slope to the crest of an arête from which the view is very fine. To this point I climbed three times in one week, being turned back on the first attempt when only a short distance from the top by what looked like a furious storm, but which, after driving my guide and me back, switched into another valley and cleared off. The second time I went alone, and had just reached the rocky wall, fifty feet or so below the crest, when a storm *did* come in good earnest. Quickly divesting myself of as much clothing as possible, and caching it under a rock, I scrambled up in the teeth of the driving rain, and climbing over the crest stood up and took my ducking like a shower bath. For half an hour or more it continued to pour, and then for a long time the clouds blotted out everything. But I waited, and shivered, and waited. By and by there was an opening—yes, there, through a rift, the sun was shining on the Asulkan Glacier. More rifts, and then all closed up again, then more, and more rifts, and then—oh, wonders! Such a sight as I can never forget. I jumped and shouted in my excitement. The clouds were rising from the valley in long festoons, the sun, lighting up glaciers and snow fields and breaking in gleams through the fast diminishing clouds, produced

such a scene as would out-do anything I ever saw in a moving picture show.

I came up to get a sketch of the panorama! That was impossible, there were only fleeting glimpses and the constant shifting of the clouds made sketching impossible. I could only take out my book, which I had tucked somewhere under my arm to keep from the rain, and make a few notes in pencil. But the impression made was so vivid and ineffaceable, that I was able to make, what many consider to be my best painting of a mountain subject. The third climb was favoured with fine weather and I secured a valuable study of the panorama in water colours, and the day would have been uneventful but for two little incidents.

While at work on my drawing I noticed far off in mid-air a small speck which, increasing in size, developed into a bird coming directly towards me, and I was soon terrified to see that it was a large eagle. I instantly dropped everything—caught up my umbrella, unscrewed the stick, which had a large heavy iron ferrule, and stood up swinging this stick and waiting till it should come within striking distance.

But when it had got within about one hundred feet of me it rose over my head and flew in a circle three times round looking down at me with an evil look in its eyes, and then to my intense relief flew away to the north. I did not continue very long at my work for the excitement had made my hand unsteady, which may possibly have had something to do with my next mishap.

When I started to come down I think I must have climbed over the rocky arête at a bad point, for I slipped and started to slide down on my back, and I soon realized that a few feet further there was a sheer fall or drop of a hundred feet or more. Throwing out my right arm, I caught hold of a bit of scrub, which fortunately held fast and my whole body seemed to swing out in the air, but I had a firm grip on the scrub and finally pulled myself

Photo, F. M. Bell-Smith

THE HEART OF THE SELKIRKS

up to safety, but not without suffering such damage to my clothing as needed the attentions of a tailor, and rendered my appearance at the hotel exceedingly embarrassing.

Some of my pleasantest recollections are of the early days at Lake Louise. My first visit to that charming spot was in 1889, in company with Mr. Albert Bierstadt, of New York, an artist very celebrated in his day. There was then no hotel there—not even a trail to the lake, so we carried blankets, etc., and camped on the lake shore at the very spot where the main entrance of the hotel or chateau now is. I remember also that we had the pleasure of meeting there Col. O'Hara, who camped near us and we spent a pleasant evening round the camp fire. Since then, I have seen the hotel gradually increase in size from one which only accommodated ten persons. (Ah! those were the days. We were like a little family, and agreeable friendships were formed; but now everything is changed.)

A strange thing occurred when I was in camp with Mr. W. D. Wilcox at Lake O'Hara. On our arrival at the camping ground we found six dead porcupines lying in a group within four feet of each other, evidently freshly dead. The next morning we found a seventh who had died in the night. It was a mystery. But when we heard that an English lady had been at this place in quest of butterflies, we conjectured that some poison which is used to kill the butterflies might have been accidently spilled, and if that poison was cyanide of potassium the matter could be easily explained.

That night we made a bonfire and cremated the porkies, their quills producing myriads of sparks and crackling loudly.

On this same trip Mr. Wilcox and I visited Lake McArthur, and first discovered the outlet of which nobody had apparently ever heard before. It was found at the extreme northwest corner, and was easily verified

by the presence of small whirlpools sucking down close to the rocky shore, and a noise resembling gravel rattling down an iron pipe.

In 1887, the first year that I saw the mountains, life in the West was very rough. I remember spending one night at a so-called hotel at the town of Revelstoke, and I had an experience which makes me shiver when I think of it.

I, with some others, was seated at a table in the large room at one side of which was the bar, when some men entered, and one tall powerful fellow, who had been drinking, came behind me carrying a sharp axe or hatchet, and poising this above my head remarked, "How . . easy he could split this man's head open!" I did not move or speak, but *looked* at the landlord, who was seated opposite me, and while he rose and invited the man with the axe to have a drink, I slipped away to my bed, and was thankful to get away early next morning. Revelstoke is now a fine town, but the landlord of that hotel and the man with the axe are still remembered by some.

NOTE.—The above charming little sketch giving some reminiscences of a well-known Canadian artist during the early days of the opening of the mountain regions to travel by the two sinuous bands of shining steel that link up the waters of the Atlantic with those of Pacific, is too good to be allowed to pass without a few words of comment and of reference to the author.

It is unnecessary to comment upon Mr. F. M. Bell-Smith as an artist. His works are too well known and appreciated to be criticised by an amateur. As he himself suggests in his opening paragraph, his chief power of expression lies in his art, but the foregoing sketch shows that as an author he is by no means insignificant.

Those of us who have seen his canvases of Mt. Sir Donald and the Great Illecillewaet Glacier, of the glorious Lake O'Hara with the snow-crowned majesty of Mt. Lefroy looming high in the background and, best of all, the wonderful painting from Avalanche Crest, to which he makes allusion, can readily realize the splendid power and real understanding that enables him to depict and express these mighty works of Nature in their immensity of solitude and grandeur.

In addition, however, Mr. Bell-Smith possesses another phase of the art of depicting mountains, and it is to that I desire to refer. As a sculptor, skilled in making map models, showing in relief extensive tracts of the most attractive scenic mountain districts, he excels. At the Canadian Pacific Railway's summer hotels at Banff, Lake Louise, Mt. Stephen and Glacier are to be seen to-day his works in such art, and models built to a natural scale show in miniature the peaks, valleys, streams, various routes of access and the line of the railway. These relief maps are of the greatest benefit to travellers, explorers and mountaineers, and to those who use the information with understanding the various topographical features and byways of the mountains are made clear.

Like Mr. Bell-Smith, my first visit to the Canadian Rockies was to the Selkirks and, like him, I have remained true to my first love. This mystic region of deep, narrow, hazy blue valleys, filled with forests of giant cedar and fir, midst which the swirling torrents rush seaward, and high above are the snowy tops of the everlasting hills, lures one again and again, and for the true artist is a region of atmosphere that baffles all but the most consummate skill.

As with all of Nature's masterpieces of scenery, the beauties of the Selkirks are difficult of approach and until the railway gave access were only matters of hearsay from the ubiquitous prospector or trapper. These wonderful regions are guarded by dense forests very difficult to travel by reason of the giant proportions of the fallen trees and the dense undergrowth of bracken and sharp-spined devil's club; while the mountain sides where not covered by forest are clad with thickets of downward-pointing alder, so dense that it is an impossibility to force a passage.

The wondrous beauty of this great range of mountains, its semi-tropical, twilight forests, its almost unimpassable thickets of alder, bracken and devil's club, and, when at last you have conquered these obstacles, the glorious heights, the white, shining snow-fields and the innumerable crystal icefalls always make me think of them as the Dear, Delightful, Devilish Selkirks; and I fancy it is somewhat in the same light that Mr. Bell-Smith sees them.—EDITOR.

OUR NEED FOR NATIONAL PARKS

By J. B. Harkin

Those who are concerned in the development and administration of Canada's National Parks began their work by asking themselves "Are National Parks worth while?" The longer they are concerned in parks the more clearly and emphatically the answer comes in the affirmative. On points where some doubts existed at first new facts, new developments are constantly arising to dissipate doubts and confirm one's faith that National Parks can and do produce results of the utmost importance to the individual and to the nation.

The commercial results—revenues from tourist traffic—can be demonstrated by figures as irrefutable as multiplication tables. These are of real importance to the individual and to the nation alike. But the results that count for most are results of a higher order—results that serve the individual as to the welfare of his body, the activity and efficiency of his mind, and the beauty and harmony of his soul. National parks are worth while because of these results and a sense of their worthwhileness in this connection serves to make working for them worth while.

Perhaps in broad terms the ultimate purpose served by national parks is to draw people towards Nature, to give them a better understanding of Nature and finally to make them realize that it is from Nature alone that they can get things which they need, things which are to their advantage. Most of us recognize, but only in a vague sort of way, how Nature dominates our lives. She is always working for us and always beneficent. The food we eat she produces for us by the miracle of the wheat field. The transformation of that food into flesh

Photo, H. E. Bulyea

MAIN STREET, BANFF, ROCKY MOUNTAINS PARK

Photo, H. E. Bulyea

BOW RIVER FALLS, BANFF

and bone and energy her power alone produces. Nature is ever telling us what we should do and never fails to show her displeasure by punishing us for failing to listen to her or failing to understand her language. After all, the principal problem of all our lives is the interpretation of Nature's language.

Now parks, primarily, are places of recreation and, perhaps, there is no law of Nature which is so universally recognized as her decree that to be fit we must take recreation. We take recreation in ten thousand forms and we take it because in the first place our instinct (Nature's command) tells us to take it, and in the second place because experience tells us of the beneficial results that follow it.

It is true that modern industrial conditions have for many years come into sharp conflict with this natural law. The results thereof are found in the slums, the prisons, the asylums and hospitals of the land. But during the past ten years there has been a very strong development of the recreation movement, which began by the establishment of playgrounds for children and expanded into a recognition that wholesome play and recreation is as necessary for the adult as for the child.

It is interesting to note that recreation is coming to be recognized as a matter of public concern, and that in some countries a department of the government has been created to deal with the question.

It is also worthy of note that in the recent platform of the British labour party, which enunciates a proposed policy for reconstruction and administration after the war, one of the planks calls for public provision for recreation. On the other hand it is observed that such large employers of labour as Sir Wm. Lever are advocating a shorter hour day—Sir Wm. Lever even suggests the desirability of a six-hour day—not for humanitarian or socialistic reasons, but because employers of labour are beginning to realize that it does not pay to turn men

into mere soulless machines and because they see that shorter hours of labour, which will allow a man to cultivate his mind and soul, will make him a better and more efficient workman. In fact, it begins to look as if we were going to come to the realization that of all our national resources the most important are our men and women, and that men and women are most valuable in a purely economic sense, when they are most alive, when they have not only healthy bodies but also healthy and awakened minds and souls.

Since work, under our modern industrial system, is often so mechanical and uninteresting that it makes demand upon only a few of the workers' bodily and mental powers, it is self-evident that we must look to leisure to make up the deficiency. The possibilities of the utilization of leisure are enormous and little has yet been done to make use of them. Leisure, as has been pointed out by Howerth, is only opportunity. "All men should be educated so that they can use their leisure to promote their lives."

The acceptance of these ideas is leading to many experiments in public provision for recreation, and we see on every hand to-day such attempts at remedial measures as municipal theatres and dance halls, community music and drama, pageants, "hike" clubs and many other communal forms of play, together with ever growing appropriations for parks and recreation grounds.

But it is now evident that these are not enough, that they do not meet one of the deepest needs of all, an opportunity for recreation in the great out of doors, not only the recreation of the restricted parks and playgrounds of the cities, but recreation close to Nature in some large area of wilderness where people can live for a few weeks or a few months a simpler, more natural life.

In consequence, a number of great cities are making provision for summer camps in the woods or mountains, where large numbers of children and older people can

go for a holiday close to Nature. Denver, Colorado, has secured two mountain parks in the foothills of the Rockies where large summer camps have been established and where anyone may enjoy a few weeks' outing at a merely nominal expense. In the Interstate Palisades Park on the Hudson a camp site has recently been established which last year accommodated several thousand children and adults. In California a similar use is being made of some of the national forests. What do these things indicate? They indicate surely a new point of view, a recognition that contact with Nature is one of the necessities of life. It has taken us some time to arrive at this conclusion, but the data collected by scientists within the last few years has shown beyond question that life in our modern cities tends almost universally to a deterioration in type and that vitality—that reservoir of the life and power of the race—under modern city conditions, is constantly being dissipated. Although we have got rid by improved sanitation and better hygienic ways of living of many of the diseases which belonged to a more unorganized state of society, the fact remains that the nervous strain, due to monotonous and uninteresting labour and the unnatural life of cities, is making inroads upon our stores of nervous energy which arouse serious apprehension in the minds of thinking men. And it seems likely that even if we were able to build our cities along better lines, in harmony with the most approved systems of town planning, with more gardens and parks and playgrounds, there would still be something lacking. Some part of the problem would still be unsolved. It is only when we can get into real contact with Nature and with the living forces of what we now realize to be a living earth that we can renew our wasted springs of vitality. For there is something we get from Nature that we can get nowhere else. What the secret of her magic elixir is our chemists and scientists have not yet discovered, but there is no

doubt that she possesses some secret store of health and vigor that can be found nowhere else. Take the example of the wild strawberry plant. You can domesticate a wild strawberry, bring it into the garden and make it a better thing commercially, but what of its flavour? It has lost that wonderful wild tang which was its peculiar charm. And, too, it has lost some of its vitality. It is more sensitive, less hardy than the plant which grows upon the hills or by the roadside. In the same way men who are transplanted to cities lose there some of their vigour and hardiness which was their original gift from Nature. I am told, however, that if you take your wild strawberry plant and transplant it back to the wilderness it will regain its original characteristics and revert once more to type.

It is possible that this may contain the lesson as to what we should do to meet our social deficiencies. We cannot get rid of all the evils of modern life without upsetting our present industrial system, but what can be done is to try and make it possible for as many as possible to revert to more natural conditions as often as possible.

This thought was brought home to me with great force on the occasion of my first visit to the Alpine Club Camp. It was in 1912, shortly after I had taken charge of the administration of the parks, and while, perhaps, I was rather vague in my mind as to their possibilities and future destiny. But as I sat around the camp fire that night watching the firelight play upon the faces of the climbers who were, like myself, luxuriating in the sense of physical well-being and spiritual peace which comes from a day spent in hard exercise in the clean, life-giving air of the mountains, when I heard the gaiety of the conversation and experienced the comradeship which grows out of dangers and pleasures shared in common, culminating in the subtle fraternity of the camp fire, I realized very strongly the uses of the wilderness. I felt like saying with Walt Whitman: "Now I see the secret

of the making of the best persons. It is to grow in the open air, to eat and sleep with the earth."

These men and women, as their faces showed, had come for the most part from the complex life of the cities. For possibly eleven months of the year they were tied to desk or class room or professional office where every day brain and nerves were under continuous strain. But for a few weeks they were free and it was evident that they were not only storing up a reserve vitality which would serve them throughout the year, but that they were also gathering inspiration and a new vision of life and its possibilities. They would be better and more efficient citizens because of their visit to the mountains. It gave me a new realization of the value of national reservations where the beauty and charm of the wilderness are conserved for all time to come and where because they are publicly administered their attractions can be opened up and developed. And I could not help wishing that the benefits they have to offer might be shared by every citizen of Canada and especially by every worker in our large cities.

For though everyone needs recreation and change and the opportunity to enjoy natural beauty, the brain and nerve workers, the people of the cities, specially require the medicine of the wilderness. It seems to be a law that the farther we have been away from Nature the more we need to get back to a natural and even primitive life. Such life not only restores the vigour of the body, but it has a very sensitive and healing effect upon the mind. It may be that for the city man this is partly due to the fact that such a life brings into play long unused powers and faculties. The impulses which were stored in his physical cells through countless centuries of human existence re-awaken and he experiences a strange pleasure in reverting to the primitive. Possibly this may help to account for the pleasure we all feel in natural sights and sounds, such as the murmur of the wind in

the trees, the falling of water or the patter of rain upon leaves. These are things which seem to awaken strange memories and it is possible they draw after them a train of associations as old as man himself. Who can explain the peculiar pleasure we all feel in a camp fire and even in its domesticated survival, the open grate fire, if it is not that it re-awakens long-buried, subconscious memories of the ages when our primitive ancestors used to sit by the camp fire at night with the dark forests behind them, safe from all the terrors they contained. I cannot help thinking, also, that one of the great pleasures and benefits of such a life is that it allows a man to resume his relationship with wild animals, a relationship as old as man himself, and which every man takes pleasure in renewing.

And, lastly, it gives him a new appreciation of natural beauty. For Nature does not reveal herself to the mere passer by. The tourist who rushes through the mountains misses much of their charm. You have to live with Nature before she will reveal to you the deepest secrets of her personality. What the influences of natural beauty are it is impossible to define. If life in the wilderness revitalizes the body of a man and frees and clears his mind, the contemplation of beauty liberates that deepest part of him which we call the soul. It takes us, as the common phrase puts it, "out of ourselves," that is, it lets us out of the prison of the ego and brings us into contact with the Universal. "I enter some glade in the woods," said Thoreau, "where a few weeds and dry leaves alone lift themselves above the surface of the snow and it is as if I had come to an open window. I see out and around myself. This stillness, solitude, wildness of Nature is a kind of thoroughwort or boneset to my spirit. What are threescore years and ten hurriedly and coarsely lived to moments of divine leisure in which your life is co-incident with the life of the universe!"

Almost everyone who goes to the wilderness experi-

Photo, H. E. Bulyea

CATARACT VALLEY, WHERE 1917 CAMP WAS HELD
On the Way to Lake O'Hara

Photo. H. E. Bulyea

LAKE O'HARA AT HEAD OF CATARACT VALLEY

ences, however dimly, a consciousness of re-creation which is the result of something more than mere exercise and the effects of sunshine and fresh air, a finer ether in which his soul is enlarged and purified, and perceives a sense "of something far more deeply interfused," which answers a need greater than that of mind or body.

National parks are reservations of the wilderness—the most beautiful areas in our country. They constitute a national recognition of the necessity for recreation; they afford our people unique facilities to satisfy their instinct for recreation; they provide those charms of beauty and grandeur which enchant and stimulate the imagination and the soul; they throw open to everyone opportunities for satisfying that persistent, sub-conscious desire for getting in touch with the mysteries of the wilderness. Their existence makes it possible for us to obey those natural laws, which urge us to seek recreation, to seek beauty, to seek the wilderness. Their existence makes it possible to reap those rewards of body, soul and mind which follow obedience to those natural laws. And when once the irresistible powers of Nature we experience in those incomparable beauty spots that constitute our parks, have re-created us, have re-made our physical bodies, have clarified our minds, have healed and purified our souls, we find ourselves seeking new beauties, feeling new pleasures, in the flowers and trees and sunsets and vistas at home which in the course of years had become common place to us.

I shall conclude with an incident which occurred in my office at Ottawa, which bears out what I mean.

Tenders had been called for equipment required for Rocky Mountains Park, and one morning an agent walked into the office seeking some additional information with regard to the tenders. He was a typical matter of fact commercial business man. Obviously his chief concern was securing business. In the course of the conversation his attention was attracted by a buffalo head on the wall. He followed up a remark about it by

an enquiry, "Did you ever see the buffalo at Banff?" He evidently associated the business in question with Ottawa and not with Banff. On my replying in the affirmative, his face brightened up; he apparently felt there was something worth while in common between us. Business was forgotten and he broke into enthusiastic praise of Banff and the marvels of the Rockies. A dozen years before he had been told by his physician in Montreal that the only chance of recovering his health, shattered by a severe attack of pneumonia, was to spend a summer in the Rockies. He had spent it at Banff, and even we whose work is associated with the mountains could scarcely surpass him in appreciation. He specially gloried in the view of the Bow Valley from the C.P.R. Hotel.

It appeared that while at Banff he rose early and habitually spent much time in the early morning before the other guests were abroad, drinking in the beauty of the view from the old look-outs or summer houses that were then on the cliff overlooking the river. One morning while so engaged he was startled by hearing a sigh behind him. He had thought he was absolutely alone. Looking round he saw a well-dressed, prosperous-looking stranger. They exchanged greetings and the stranger replying to a remark as to the beauty of the scene, said: "Beautiful! Why, sir, I had to come to Banff to learn that there was a God."

The story which the stranger told him need not be repeated here. It was the old story of a man who in the successful pursuit of wealth and success had found himself drifting through the various stages of doubts and indifference to wind up in absolute unbelief. The relation itself and the circumstances under which it occurred drove home to me as never before, a realization of that subtle influence which the mountains so powerfully exert in the way of uplift and purification and moral and mental, as well as physical re-moulding upon all who come within their domain.

IMPRESSIONS OF MY GRADUATING CAMP

By Rhoda W. Edwards

How well I remember that glorious July morning when, leaving the C.P.R. at Hector, we started for our camp in Cathedral Valley.

As the engine shrieked "good bye" we turned instinctively to watch the departing train only to meet the derisive gaze of the goggle-eyed tourists who, from their observation platform, stared at our alpine costumes with the scornful scrutiny of provincial intolerance.

Undismayed, we swung off at an easy pace, with light packs and lighter hearts, while the rollicking rhythm of the car wheels carried into the ever increasing distance our cares and responsibilities.

As the sounds of the outer world died away Nature spoke to us, and we understood her language. The stately trees with swaying courtesy bent and whispered gracious greetings as we passed. The saucy marmot peeping at us from beneath a boulder whistled his welcome, too. The very mountains seemed to open up, then close around us as if to hold us closer in their strong embrace.

Gradually the first hush of awe yielded to an awakening sense of our own latent powers, an appreciation of our birthright, a determination to win our way to Nature's citadel and scale her ramparts. Dreaming thus as we followed single file along the zig-zag trail I was roused from my reverie when the party stood suddenly at attention.

Above us waved the Union Jack and not far off there floated the Stars and Stripes, emblems that to us Anglo-Saxons mean "Home" wherever found.

As we stood gazing aloft, out of the dense thicket, like Robin Hood, sprang our camp angel Mr. Richardson, but, unlike the merry outlaw, his hand was outstretched to give and not to take. With hearty greetings he led the way along a verdant path to where our camp was pitched. There were tables bountifully spread with a steaming repast, for which our long hike had well prepared us, but even hunger about to be appeased yielded precedence to the soul's feast, which Nature offered for our delectation. Scattered among the evergreens like pearls in emerald setting were our white tents, while a mountain torrent in its winding course separated the main camp from the more secluded glade where were the Ladies' Quarters.

Here the glacial stream, that on the farther side tossed itself into a frenzy of foam as boulder after boulder impeded its passage, meandered lazily among the shrubs and juniper bushes, leaving limpid pools along its wake. Crowning the picture and towering above all like cathedral spires, the snow peaks of the surrounding mountains glistened in the noonday sun. Here, too, like a defiant ogre guarding his enchanted domain, the Watch Tower glared down upon us, grim, gaunt, unscalable.

After luncheon we formed into various scrambling parties. Some to reconnoitre neighboring glaciers, others to climb Vanguard. The more venturesome to attack the Watch Tower, seeking in its vertical walls some undiscovered crack whereby an ascent might be hazarded; while we graduating members were initiated into the treacheries of shale.

You who have never climbed cannot appreciate, you who are long since "Actives" may not recall, the thrill not unmixed with dismay that such scrambles give the novice; but never shall I forget my first experience, when with long, lazy stride we left the camp, crossing the rustling torrent on a slippery log whereon we pirouetted as it rolled beneath us, till we reached the woods beyond, and forced our way through the dense underbrush.

Cheerfully we goose-stepped over what seemed miles of fallen trees till reaching timber line we looked back upon the camp nestling like a white speck in the valley far below us.

As I surveyed the landscape I congratulated myself upon a strenuous day's work successfully accomplished, only to learn that the scramble had just begun, and that a vast sea of shale separated us from the ledge where our actual climb would commence.

To my untutored eye we were making for a point periously near a precipice; and as my feet sank into the shale my heart sank deeper still. My alpenstock slipped from my grasp and I slid helplessly toward that terrifying abyss. I was nerving myself to meet my inevitable doom when my guide called encouragingly, "Never mind, the shale will pile up under you." Even as he spoke, my precipitous descent of what had seemed an interminable distance, though it proved to be but a few feet, was suddenly arrested, and after a few clumsy efforts I learned to manipulate my alpenstock, which some kind friend had rescued, and walk in shale, if not with grace, at least with comparative ease. On our return journey I slid again. This time by preference for my first experience had taught me that shale is not as bad as it looks, and though tedious in the ascent may prove equally exhilarating on the downward grade.

Though I look forward to my next camp with enhanced pleasure none can have the glamour of my graduating year. Epicurus taught that the maximum enjoyment follows previous discomfort, and my initial climb was a long path of places that led to ecstasy. The triumph of victory was preceded by the anguish of uncertainty. The shadow of failure stalked me to the finish. But at the summit it left me to the contemplation of a new world, with the eyes of a new born self, and the rapture of that hour is indescribable.

Every incident of that eventful day is indelibly written

in my memory. I can hear the summons before the dawn. I can feel myself groping among the balsam boughs of my tent for mislaid gloves and goggles. Whiffs still come to me of the savoury bacon, the steaming coffee on which we breakfasted. I listen again to the few well chosen words which our director cheered us on our way dispelling the gloom of dawn and doubt.

The lessons that were learned that day are lasting. They endure not for one climb only but for all life's long tedious trail wherever obstacles block one's path, to conquer us, or by us to be overcome. How can I forget the spirit of the Alpine Club as exemplified by the outstretched hand that assisted me across the roughest places, and saved me from the perils where my stumbling footsteps led.

Would that I could "follow up" again beyond the timber line to cull the blossoms that had dared to climb where no other vegetation grew. Would that we could lunch again on the ledge that seemed but an eagle's nesting place, and quench my thirst in the tiny stream that trickled from the mouth of the glacier. In such an icy draught and not in the tepid fountains of torrid climes may the Elixir of Youth be found.

Finally, I would lay my hand again upon the snow capped peak where first I pledged allegiance to the Alpine Club. There weariness and discouragement dropped from me like the clouds that hung so far, far below us.

Such is the sublimity of climbing: the rising above the clouds—beyond our human to our superhuman selves! Gladly would I have remained longer upon the ridge in contemplation of the superb panorama, but the sun was high in the heavens and crevasses might open in the glaciers to be crossed, while the thunder of avalanches warned us to make haste. Homeward bound! What glorious glissades we had en route. How easily we sprang from rock to rock where we had toiled so

laboriously in the morning. What speed we made sliding down the shale slope, up which we had crawled, and when we reached the camp how joyous were the voices that greeted us, how hearty the grasp of congratulation. My heart is stirred with grateful emotion when I remember the genuine gratification of my comrades in our success.

In the twilight after our hearty supper what a balm for aching back and tired feet to drop in satisfied exhaustion beside the blazing logs of our camp fire, to feel a sense of warmth and rest come stealing over you, above all to know that you belong to the mystic circle forever bound in Alpine friendship.

There beneath the starlit sky, beside the rushing torrent we sang the old refrains or listened to some fellow-member erudite in the secrets of science whose "open sesame" rolled back the portals of knowledge displaying to our mental vision the treasures of the learned. There, savant clasped the hand of student in the Brotherhood of Mountaineers, there nature lovers from many countries, from many walks of life, met in fellowship, each bringing the best that lay in him to offer on the Altar of Fraternity.

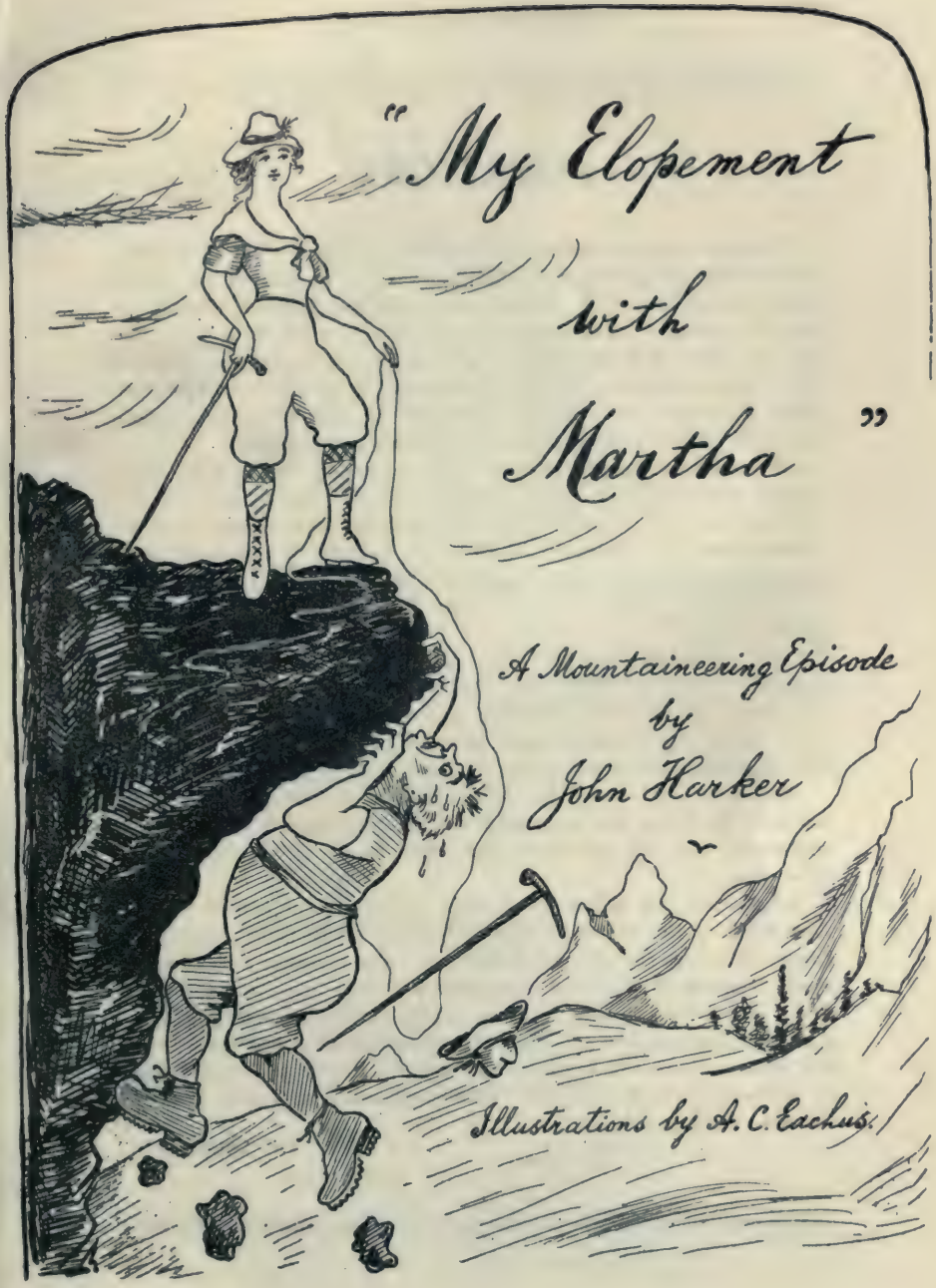
What camaraderie, life in the open begot; what friendships sprang like sparks from evening hours around the fire; and when the crackling logs had turned to glowing embers, and we had picked our way by starlight across the swollen stream amid much merriment, what sweet dreams wove themselves into the fabric of our slumbers, and where may more refreshing sleep be found than on a bed of balsam in the very arms of dear old Mother Earth?

* * * * *

To-night as I write I look out across the Golden Gate where the search lights sweep the Bay of San Francisco for sign of lurking foe.

All day the garrison has resounded with tread of marching feet, but clearer than the clarion call of military activity sounds the tiny trickle of that mountain stream that once quenched my burning thirst, brighter than the lights of "Alcatraz" shines the blaze of last summer's camp fire, in the glare of whose crackling logs, I discern the old group of kindly faces, while I listen to the song of one, the story of another, till the evening grows colder and, as is our wont, we clasp hands around the glowing embers singing "For Auld Lang Syne." Thus the picture fades into dreamland and as it vanishes out of the stillness of the night sounds the last call "Taps."

From east to west cantonment echoes the bugle's long lingering note reminding me of those among us who in the great struggle have achieved their Final Climb.


"My Elopement
with
Martha"
A Mountaineering Episode
by
John Harker
Illustrations by A. C. Eachus

FOREWORD

This amusing and clever little skit on the Alpine Club of Canada, entitled "My Elopement with Martha," is not so skittish as would appear on the face of it. There is a deeper note below the surface—one of warning. Procrastination is the thief of time, says the proverb. Here, it is made clear that it is the thief of other things as well: enjoyment of the thrills of the mountaineer, the delights of the Camp Fire circle and lasting memories of Nature's beauty spots amidst the snow-crowned peaks of the Canadian Rockies.

The story is presented to the Alpine Club by the author, John Harker, whose alias in everyday life is John W. Hugill, Law Advisor to the great C.P.R. corporation. The excellent sketches are by A. C. Eachus, who has portrayed in them an epitome of the story and, most prominently, the gentle spirit of "Martha," as the embodiment of all that is best in women and particularly women of the Alpine Club.

The presentation of the idea has created the Alpine Club of Canada's "Martha Fund" for Prisoners of War. It is in fact *The Fund*, for it is the intention of the Author, should this issue prove successful, to supplement it with another Martha tale, and then another.

The hero and author is not so dilatory as he would have us believe. He is in fact a mighty hunter, and a keen lover of the wilderness and all it stands for, who is in search of further adventure.

Should the call of the Great Hills of Canada not appeal to you, then think of the object in view and buy a copy—think that every twenty-five cents for each copy sold will bring pleasure and relief to some Prisoner of War and, very possibly, will help fill an aching void. If you have friends get them to buy copies or, better still, take a number yourself and sell them for us on behalf of our heroes now far from home in the hands of the enemy. Copies can be obtained by addressing S. H. Mitchell, Secretary-Treasurer, Alpine Club of Canada, Banff, Alberta.

THE DIRECTOR.

"Respectfully dedicated to those cheery Amazonian spirits, who, having spurred mere man on to mountaineering effort all day, soothe his physical ills with their presence around the camp fire when the evening shadows fall, and to all dutiful wives who consent thereto."

MY ELOPEMENT WITH MARTHA

A Mountaineering Episode

MARTHA

Perhaps to be technically exact I should call these reminiscences "Martha's Elopement with Me!" That would not quite hit the nail on the head, because it *was* an escape or running away, but I did the escaping and running, not Martha.

Do not for one moment imagine, kind reader, should you rejoice in the appellation of "Martha," that there is anything personal in this narrative, or that I am thinking of you in particular. Martha is the embodiment of all we

men find in the gentler sex ever to a more or less extent spiritually present, urging us on with the magical word

THE GLAD HAND
(Other "Features" deleted by Censor)

"Excelsior," whether it be mountaineering or any other feat requiring some effort, and never leaving us until it

is accomplished. "Martha" is the name I have chosen, and "Martha" I mean to stick to throughout these pages, just as "Martha" stuck to me.

To be brief, I have been a member of the Alpine Club of Canada for five years. With what enthusiasm I joined

IT WAS A CHEERFUL PROSPECT !

and mentally painted a beautiful halo around my head as a Graduating Member at the first succeeding Camp, others have no doubt experienced and the rest can very well imagine. It was not to happen, however—the halo was not for me. There appeared to be more alluring, albeit less satisfying recreation near at hand, or that evil spirit "Procrastination" acquired a foothold, and the year went by.

AROUND THE CAMP FIRE

It was the next year I first heard of Martha. She had been there. She had climbed the 10,000 feet over rock and glacier.

THE GREAT MOGUL!

I felt a gentle tapping at the storehouse door of things neglected. A gentler voice with apparent timidity

A Good Start

seemed to say, "Get up for your climb," and I, poor slothful mortal, turned again on the other side to sleep—it was so much easier—and so this other year rolled on.

The War upon us, perhaps, afforded some reasonable excuse for unfulfilled qualifications to some who obeyed the Higher Call, or tried to do so.

Not so the year that followed, and Martha plainly told me so, when, figuratively speaking, she packed her dunnage bag and hit the trail to Banff, to make her third real ascent. The fishing was very good in the Spray Lakes that year, and oh! how I wanted to hunt mountain goat and sheep in the fall. I abandoned the task at hand for the pursuit of the chase.

If there is any Graduating comrade as delinquent as I, whose resolutions have fallen unfulfilled on the hillside leading to the Club House, even as mine, I hope, companion in misery, Martha's spirit troubles you as much as it did me. I know of one such case—perhaps it is yours, sympathetic reader!

Martha returned from her third Camp calm and dignified, with the conscious strength born of something attempted, something done. The subject was not alluded to. Her spirit treated me with cold disdain. I had played truant for the third time since the first gentle reminders reached me from her spiritual world. I had fished in the Spray and shot my limit of mountain goat—I had clearly departed from the path of duty—I was still unqualified for the Alpine Club of Canada—almost an outcast.

When the Camp at Hector was announced this year, conscious of some spiritual irritation, I took counsel with myself, and summoned Martha. I expected a scolding. I expected to be told I was not worthy of any further effort on her part. To my relief she was kind and forgiving; in fact, she was quite sympathetic with my contrite spirit. Her message was brief and very simple. "Wilt thou climb now?" she said, and with all the courage I could summon I heartily replied, "I will."

The compact was made. Her spirit was to go with me to cheer, urge and carry me on. The camp was well nigh over.

Time was of considerable moment. Oh, how I regretted, at every turn of the hurry and bustle of getting away, the past opportunities; when, in the light of subsequent events, I might have climbed even as Martha, and never have been missed from the High Executioner's list in the toiling world of the plains.

It was a gorgeous morning, after the much needed showers during the night, when we alighted, after breakfast on the train, and commenced our walk to the Main Camp, three miles distant from Hector. With the lure of the wild mountain scenery firmly grafted into my limbs, and Martha's spirit ahead, we swung along at a comfortable pace, arriving at the Main Camp well under the hour.

The genial Secretary met us, as they say in the West, with the Glad Hand and Cheery Smile, neither lacking in sincerity, and, as customary, at once proceeded to chide me for failing to herald my approach as a would-be Active with a timely warning of my intention. It was here that Martha relieved the tension of the situation with her playful aside, "Here's another truant," and the joy of the lost sheep come to repentance made everything appear plain and smooth sailing; in fact, I at once felt I was one of Mr. Mitchell's family and quite at home.

After registration and the necessary camp accommodation had been allotted, the question of climbing possibilities was discussed and decided upon. "You must take a short stroll to the subsidiary camp at Lake O'Hara, about six miles distant," whispered Martha. "Then the next day you are down for a try-out on Mount Schaffer." (A name one at once associates with "Old Indian Trails.") I was quite jubilant—then the awe-inspiring thought—a real climb up a glacier-hung mountain over 10,000 feet.

"Odaray is a beautiful climb," chimed in my newly-found Amazonian friends, looking up quite uncon-

THE HALO WAS NOT FOR ME !

cernedly from their knitting; "and a 'ducky' walk of six miles before you reach the base of the mountain."

It was a cheerful prospect for my soft and pampered flesh to attempt to endure (*comme il vous plaira*) and I

STILL A GRADUATING MEMBER

felt a sinking heart, a flagging spirit and an absolute absence of courage, until Martha reassured me, *sotto voce*, "It is not a difficult climb. We will be perfectly safe with Christian," she said.

And there he was, ready for my boots to put the creepers on the soles and make a pair of mountaineer's boots out of my perfectly good hunting shoe packs. And he did it, regaling me with sundry bear and goat-hunting stories the while, causing me again to experience pangs of remorse.

To think that I had irretrievably lost the association of these perfectly splendid specimens of physical, fearless, modest manhood for five years past and no earthly chance of overtaking it!

I was introduced to the Camp Fire that first evening after six o'clock supper. Camp fires are a *sine qua non* of all journeys into the forest primeval. Nevertheless, I like now, in the quiet seclusion of my own domestic hearth, to think that the Camp Fire evenings of the Alpine Club of Canada bid fair to be unique. Annie S. Peck, who searched for the apex of America, making a record climb of over 20,000 feet above sea level, was there to delight and instruct with her reminiscences. What a joy to meet the Alaskan scenic artist, Davis, in the flesh, and to hear how he kept *warm* in the lone Northland. To hear from the lips of no less an authority than Taverner, the Dominion Ornithologist, that hawks by destroying gophers at the rate of at least one every other day, atone for all their alleged depredations in the poultry yard, in this age of high cost of wheat. To see the Three Graces—mother and two daughters—entering into the spirit of camaraderie with a Graduation Song.

Alas! that I should not be permitted to meet the Great Mogul Director, Wheeler, at this Camp Fire. The reason I must hasten to tell, feeling satisfied that erring ones will appreciate the moral of my random story and will be sympathetic with my conclusion, if not deeply touched by my epilogue.

I assembled at roll call the next morning almost to the minute. *L'exactitude est la politesse du Roi.* I felt a kingly spirit and it was good to the taste. I was scheduled to

conquer a mountain — attempt something, and *Deo volenti*, accomplish it.

With a large plate of porridge tucked away comfortably, and my trusty alpenstock in hand, we started. I

I Made My Vow!

felt quite proud to be entrusted with a rucksack, the repository of three lunches, to be handed over to the guide at Camp O'Hara before starting on the ascent. We were away to a good start. The air was cool after

the early morning shower—Martha was with us, and all was well. We arrived, as we had departed, on schedule.

A righteous judgment upon me. The clouds were there first and shed a sprinkling rain, increasing with each effort at half-hourly intervals, until, unable to resist the temptation to rub it in to all slackers, even as I, the Great Unknown controlling the elements turned the rain to snow, and with sinking hearts we retraced our steps to the Main Camp — disappointed, but not (Oh, dear me, no!) downhearted, for in that retirement I learned many things. Martha realized she was not very successful with her remark that it was a pity we had not come into Camp when it opened, and sought to encourage me with the hope and expectation of a fine to-morrow.

To-morrow is the thought that had pursued and overtaken me for the past five years, and I was still a Graduating Member. To-day, the one period in that long lapse of time when the glorious possibility of seeing my name posted as an Active Member was almost within my grasp, had become Yesterday.

What a hopeless predicament—how could I face the wife of my bosom, the God-given mate, who, having tearfully consented to my "escape" to the perils of the mountains with their gaping crevasses and treacherous rock faces, anxiously awaited the moment of my victorious descent from the clouds and return to the felicity of our domestic hearth with the halo. To think that I could never tell my children I had climbed above the timber line—on over the glacier field—up the chimney—upon the ridge, and sat away up on the cairn and coasted part of the way back with true mountaineer's delight.

As I stated at the commencement of these last few thoughts—what a hopeless predicament!

Martha came to the rescue again. Brave Martha. "Never mind if it does snow all night and we can't climb to-morrow or the next day. It will soon be fine again. Why not try Stephen some week end?"

With my hand firmly clasping the trusty Guide Book, and with all the solemnity I could summon for the occasion, I made a vow, and whether it is laid down in the regulations of the Alpine Club of Canada or not, I neither know nor care. What I do know, and here write down, is, that when the mystical spirit of Martha in my evident distress whispered, "Wilt thou climb Mount Stephen soon?" I answered fervently, "I will; lead me to it."

EPILOGUE

If it be profitable to "Do it now," whatever the work at hand is in business pursuits, it is equally advantageous not to put off one's play. To you, sympathetic readers, who for a brief moment have turned Westward, and for a breathing space hovered on the summit of our Canadian Rockies, but have never explored the vastness of this great domain, I urge you to partake of the joy of your first Camp Fire without delay. To those Unqualified Members still struggling amid many temptations with their known duty to graduate as Actives of the Alpine Club of Canada, I conjure you to listen to Martha, make good your vow and climb something.

HAPPY THOUGHTS

THE SEVEN AGES OF THE MOUNTAINEER

By Allen H. Bent

All the world's a playground
And all the men and women merely climbers.
They have their ups and their downs;
And the climber in his time takes many parts,
His acts being seven ages.

At first the aspiring school boy, with his satchel,
And shining morning face, creeping like snail
Unwillingly to school, with his eyes upon the hills.

And then the youth, feeling his strength,
Teaching his feet to feel the ground,
And making his first little ascent.

Then the enthusiast, sighing like furnace
And perspiring like rain, toiling unceasingly
Above the trees and above the clouds.

And then the traveller, full of strange notions,
And, bearded like the pard, seeking the bubble reputation
Even in the volcano's mouth. And so he plays his part.

And then the lean and hob-nailed alpinist,
With colored goggles on nose,
With rope and ice-axe daring the eternal snows.

The sixth age shifts to the towering rock peaks,
Where full of honors and years the veteran
Completes his climbs. Last scene of all,

That ends this strange eventful history,
Is the age of reminiscence and authorship.
Sans hobs, sans rope, sans ice-axe, sans knapsack,
The old mountaineer summons from the shadowy past
The climbs that once have been.

CLIMBERS

By Cyril G. Wates

"Whither away, Friends?"
"When the gray of the dawn lies cold and still
"On snow-clad mountain and spruce-clad hill,
"And down in the valleys the purple of night
"Still waits for touch of the sun's first light
"To drive it hence."

To the dizzy heights, Friend.
Scaling the rocks to the névé white
And the snow-dome corniced on left and right,
And when sunrise comes in its regal state
You shall hear us shout from yon far arête
On our upward way.

"What do you seek, Friends?"
"Know you not that the valleys hold
"Wealth of silver and wealth of gold?"
Yes, but the mountains which seem so bare
Have burden of treasure more rich and rare
Than any you know.

"What treasures are these, Friends?"
The winds of God are more than wealth,
For they tint the cheek with the glow of health,
And the pulses throbbing in every vein
Give a sense of joy that is almost pain
To the thrilling heart.

"But what of the risks, Friends?"
"Do ye not crawl with bated breath
"Where every step is a game with Death?"
The rotten rock and the sliding snow
Are trials to be overcome in the glow
Of our youth and strength.

"What of the goal, Friends?"
"What of the summit ye strive to reach?"
Ah, the climber knows, but he cannot teach,
And he never forgets, though he rarely speaks
Of the boundless sea of snow-clad peaks
That is stretched below.

And wot ye well, Friend.
That whoso the summit doth once attain
Shall never be quite the same again.
Like the aged Rabbi of Levi's race
Who in the flesh beheld God's face,
As the Talmud saith.

"What of the Man, Friends?"
The soul of the Climber may well be known
For the mountains have voices which call to their own.
And he would climb must be true and tried
For the lives of the many full oft reside
In the hands of one.

"But what is the end, Friends?"
Little we reck what the end may be,
But more than the present in Life we see
And give good heed while the truth we tell,
The Man who would love the Maker well
Must love His works.

GRADUATION

By Rhoda W. Edwards

In the morning, oh! ye climbers,
Though the dawn be cold and grey,
You must leave your beds of balsam
And with ice-axe pick your way.

You must climb above the timber,
Cross the fields of ice and snow,
Ere the avalanche be on you
Or crevasses wider grow.

Though the shale be slipping, slipping,
Though the rocks are flying fast,
Though your brow with sweat be dripping,
You will reach your goal at last.

Up the chimney, round the cornice,
Then a traverse on the ridge,
Hold the rope taut! Here's a chasm,
One by one you'll have to bridge.

Grip with knee, with toe, with finger,
There's the peak with cairn in sight.
When you've scaled it you may linger,
With a mountaineer's delight.

Then retrace your footsteps slowly
To the glacier fields below,
Where you glissade homeward swiftly,
Coasting, sliding down the snow.

Oh, the welcome that they give you,
When you reach the Camp at night,
And they lead you to the bonfire
Where you've earned a seat by right.

ALPINE CLUB NOTES

A New Centre of Mountain Attractions at Atlin, B.C.

Mr. L. C. Read, of Atlin, B.C., has brought to the attention of the Alpine Club of Canada a new centre for mountaineers and mountain scenic attractions. His letter of February 11th, which is here published, was accompanied by twelve beautiful views from his own camera, eight of which, in reduced form, are now reproduced. A number of these views are telephotos taken at distances from the subject ranging from 6 to 40 miles. The original size of each view is 5¾ by 7¾ inches, and the price varies from 50c. to $1.00 per print. Prints can be had on application to Mr. L. C. Read, Atlin, B.C. His letter follows:

Atlin, B.C., February 11th, 1918.

Mr. A. O. Wheeler, A.C.,
Sidney, B.C.

Dear Sir,—Mr. Scarlett, of this place, a member of the Club, tells me that you would like some views of the region and a short description of the same, so I am sending you, under separate cover, several views that I think will interest you, from a scenic standpoint, of a practically new and delightful portion of British Columbia that has hardly been touched as yet by members of your Club.

I will say, to begin with, that Atlin is to be reached by boats from Vancouver, B.C., to Skagway, Alaska; thence by White Pass, railroad and boats to Atlin, which is on the east side of the lake of the same name. The lake is some ninety miles long by from four to twenty miles wide, making it the largest lake in B.C., and not to be surpassed by any other part of the world for beauty of its scenery.

Parties should always get a lay over of at least two weeks at Atlin in order to see this vast region. Our mountains are not as high as those of the Rocky Mountains' region, as we are near the coast. Atlin is 2,230 feet above sea level; the mountains rise about 4,000 feet more on an average; timber line is about 1,700 feet above the lake and most of the mountains are easily accessible from the lake shore.

Llewellyn Glacier, at the south end of Atlin Lake, is one of the largest in the world, being some 75 by 40 miles in size; the western or southwestern side is known as Taku Glacier and is to be seen from the boats on the way north in good weather.

I have numbered the views with a blue pencil so as to be able to describe each one in detail to you from No. 1 to No. 11.

No. 1 is a view of a mountain some 25 or 30 miles north of Atlin, on the edge of the lake, which rises to 6,950 feet above sea level; it is given on the map as "Minto," but is locally known as "Jubilee," while the Indian name is "Keyun." I very much prefer the Indian name in this case, as it is a rather pretty name, and means the mountain with birch trees growing about it—so the Indians say. This picture is a telephoto, taken at about fifteen miles distant.

No. 2 is a view of Atlin Mountain, taken from third island, about a mile in front of the town of Atlin. Views Nos. 1 and 2 were both taken in April, 1916. Atlin Mt. is given as being 5,500 feet. The ice was still on the lake when these views were taken.

No. 3 is a telephoto of the Sloko Range, which lies some distance south of Atlin Lake; it was taken on the 24th May, 1916, from the east side of the O'Donnell River and at a distance of some forty or more miles.

No. 4 is also a telephoto, taken at about six miles distant, of Cathedral Mt. in Tores Inlet, to the west of Atlin about twenty-five miles; by a slight stretch of the imagination you can make out the face of the old man on the topmost peak, looking south in the direction of the great glacier. This mountain is given as being at an elevation of 6,000 feet.

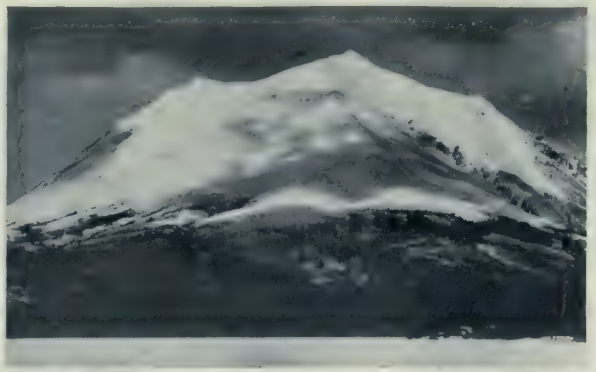
No. 5 is a telephoto of the Mussen Peaks, which lie to the southwest of Cathedral Mt., at the end of West Bay, and on the edge of the great ice. I made this negative from the south side of Teresa Island, from a high bluff above Rodericks camp. These peaks seem to have the euphonious title of "Caplice" Mt. on the maps available, and are given as 5,500 feet.

No. 6 is a view of "Tsatia" (Indian name for rocky mountain) at nearly the extreme south end of Atlin Lake. Like Cathedral and Keyun, it rises direct from the water's edge and at quite a sharp angle, as may be seen from the photo. The map I have before me does not give the height of the peak, but it must be 6,000 feet. I should judge that from its summit fully three-fourths of all the great glacial region could be seen, but as yet I have not verified this. There certainly must be a very fine view of the "Quartette" peaks from the south (left hand) side of the mountain, as seen in the view.

No. 7 is a view of the "Quartette" peaks from the south side of Teresa Island, taken July 28th, 1917. The lake is over twenty miles across at this place, though it does not look it in the view; hence I conclude that the Quartette Peaks are forty miles away at least. This view is almost identical with the one that may be seen from the deck of the W.P. boat, Tarahne, on the great south lake, with an 8-power pair of binoculars.

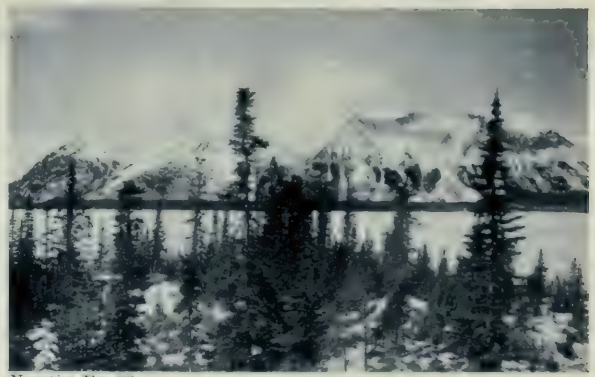
No. 8 is a view of the eastern face of the great glacier, Llewellyn, as seen from the bluff above Moraine Lake. In the foreground is seen the lake, while beyond is the moraine in front of the ice, which is receding, like nearly all our glaciers of to-day here in the north. From the spot where I took this negative the ice is fully two and one-half miles distant. The front of the ice is estimated to be four miles across. Strange as it may seem, Moraine Lake is not fed by the glacier, but from a high lake half way to the top of Mussen Mt. on the right and to the rear of where this view was taken. The medial moraine, as seen here, extends back for a number of miles and I have estimated it to be at least 150 feet in depth of rock and gravel deposited on the surface of the melting ice, which is anything but nice and clean on the surface as a rule, though clear streams of pure ice water are encountered continually while travelling over the glacier. The distant mountain seen in the upper right hand side of the picture is a prominent landmark throughout this region and certainly is more than twenty miles away from this viewpoint.

No. 9 is a view taken in June, 1916, from a point some eight miles south of the view point of No. 8. It shows the mountain



Negative No. 35 *Telephoto at 15 miles*

VIEW No. 1: "KEYUN" (MINTO) MT.
North end of Atlin Lake

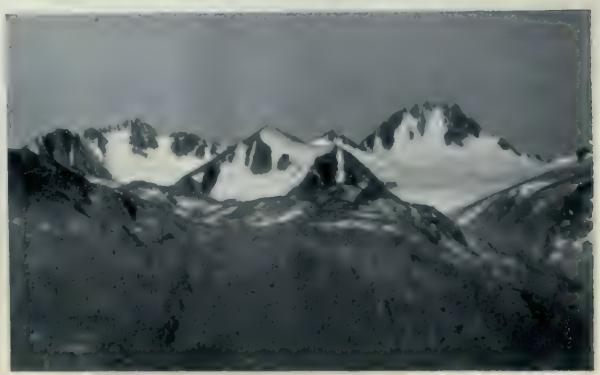


Negative No. 22

VIEW No. 2: ATLIN MT. FROM 3rd ISLAND

Negative No. 50 *Telephoto at 45 miles*

VIEW No. 3: THE SLOKO RANGE
From O'Donnell River



Negative No. 97 *Telephoto at 25 miles*

VIEW No. 5: MUSSEN PEAKS
West Bay

Photos, L. C. Read

referred to in No. 8 which, by the way, has no name as yet, so far as I can find out. The mountain is surrounded on all sides by glacial ice, the same as the foreground of this view represents. The picture was taken about the middle of June, 1916, and I feel sure that a barometer on the highest peak would register over 7,000 feet, and that it is higher than "Tsatia." From the point where I took the view to the edge of the ice I estimated to be three-fourths of a mile, while it was fully two miles to the séracs at the right; the medial moraine in the middle distance was, we estimated, five miles away, while the distant mountain could be not less than twelve or fifteen miles, probably much more. This splendid mountain was veiled in cloud and mist nearly the whole day, but when I had the camera set up ready for exposure, after waiting about ten minutes, the veil lifted as if to favour me, and I got the negative here shown, when the cloud returned and enveloped the scene for the remainder of the day. I felt this was a great honour to me by the genii of the mountain, as it is very rare that a photographer is so favoured, as we all know well from experience.

No. 10. In this telephoto view, taken on July 28th, 1917, from the south side of Teresa Island, at about seven magnifications, the point where I took No. 9 may be seen in the right centre of the scene, also the séracs, though the view was taken looking more to the southwest, and shows the high glacial range far beyond and to the right of the one seen in No. 9. The range is really the head of all this glacial region, as the ice flows in nearly all directions from it as a common centre. Taku, Denver and Llewellyn Glaciers all have this range for their fountain-head. The snowfall is always heavy here and the great pressure readily forms it into ice, which is then slowly started on its journey to the lower elevations; there it is melted faster than it is formed, which causes recession of all the fronts except, possibly, Taku, which I have not seen as yet. When more ice is formed than the sun and Chinook winds can melt we have an advancing glacier, but when it is the reverse, recession occurs. Llewellyn Glacier has receded for several hundred feet since it was discovered, not so many years ago, and the whole front of the ice is greatly changed since I first saw it in 1911. At times there seems to be a lake break forth from the ice that floods all the ground-moraine, so that it is a dangerous quicksand and cannot be used to arrive at the ice; but these floods occur at rather rare intervals and, so far, I have had no trouble in getting on the ice from the trail, but others have had difficulty so great as to prevent their parties from putting foot on the ice-field. I have been too busy, heretofore, when at the glacier, to set motion-stakes and record the movement of the ice, but this year I hope to be able to plant stakes and take measurements to determine the rate of flow.

No. 11. In the extreme distance may be seen the same range as described in No. 10, while this southernmost peak of Mussen Mt. dominates a very great portion of the glacier region. I propose to cut a trail from my camp on Glacier Bay to the top of the peak the coming season, as it will be a by no means hard six miles to the peak, though the first mile will be of a very rising nature; once above timber-line the old game trails will be quite comfortable to negotiate, I am sure. The foreground of this view is my ideal beauty spot, named for me by my friends who, figuratively, with great pomp and ceremony, presented me with it, that I should have it for my very own, as far as they were concerned; however, I am not

inclined to be selfish about it, and will relinquish title when a more worthy shall appear.

In conclusion, I will say that I have never seen a more lovely region for grand mountain scenery. Few tourists have, so far, seen it except from a distance. The region is a vast one and takes several days to visit. June, July and August are the only months when it can be reached with comfort and in good weather. The whole journey from Vancouver is one grand panorama of beautiful views and, perhaps, I may be allowed to quote the words of Mr. Alfred Chetain to me last summer, when he said: "There is no better scenery to be found anywhere in the world."

L. C. Read.

From subsequent correspondence the following information is gathered:

"The view, No. 102, that I sent you, seen from the top of Mussen Mt., which is on the right and close up to the region of the giant nunataks seen in the distance, will give one a never-to-be-forgotten view of the great ice at close range that, I am sure, will please all lovers of grand mountain scenery. And yet the distance will be vast, even from Mussen.

"On or about the 24th June (full moon) I intend to get a view of the moon at midnight when it will be exactly in the south. At that time one can read a paper without difficulty in this latitude. The print will look like a daylight exposure with the exception that the moon will show very plainly and record the exact exposure by its oblong figure (one-minute arc) in the southern sky; of course, the exposure will be one minute, which I have found ample at this time of the year. A similar negative, made two years ago, gave very good results, but was injured by dust in the plate holder, caused by the shaking of the boat by the out-board motor, so I seldom make a print from it.

"I think the return fare from Victoria to Atlin is about $110.00. The White Pass and Yukon Railroad Company have a good inn here, and twice a week the boat takes tourists around Teresa Island, but they do not go to the glacier or stop. The W.P. have boats for hire, 14 feet long, with out-board motors.

"There are no Alpine guides here, and local prospectors and hunters would be about all that could be relied upon. However, most of the desirable places for A.C.C. members to visit would hardly need a guide. Camp would be made on the lake, near the commencement of the climb, and people accustomed to it would have no trouble going alone or in small parties.

"My Glacier Bay camp will be a sort of general headquarters for most of the trips at the south end of the lake, but the lake is about ninety miles long and twenty-five wide at the south end, so it is necessary to have boats of our own. A second boat can be procured, I think, in case there were more than four people to go at a time.

"The summer is remarkably free from rain and storms—cool nights and no hot days; the only thing to reckon with on trips is the wind from the great ice, which seems to blow in every direction away from the glacier and, sometimes, but not often, is so strong as to make me take cover with a pleasure boat. There are days when the reflections in the water are wonderful. I consider June and July about the best time to come."

Negative No. 96 *Telephoto at 35 miles*

VIEW No. 7: QUARTETTE PEAKS
From S. Atlin Lake

Negative No. 92

VIEW No. 8: LLEWELLYN GLACIER
From Bluff Above Moraine Lake

Mussen Peak

Mr. Read's prospectus for 1918, which is published below, sets forth the programme and facilities he offers to visitors to the region.

PROSPECTUS FOR 1918

This season of 1918—from about June 15th to September 1st—I propose to hire out to go to the great Llewellyn Glacier, with from two to four people at a time—ladies and gentlemen—who wish to see the region and have an outing at the south end of Atlin Lake.

I have a 17-foot Turner boat, outboard motor, tents, bedding, Yukon stove, etc. You will need to get a lay-over ticket, so as to remain in Atlin something like two weeks, as it takes from six to ten days to do the glacier region. The trips are as follows:

Atlin to Lunch Camp, about 18 miles by boat.

Lunch Camp to Glacier Bay, about 18 miles by boat.

Glacier Bay Camp to the Glacier, about 3 miles.

Glacier Bay Camp to the top of Mussen Mt., about 6 miles.

Glacier Bay Camp to Read's Lake, by boat, about 12 miles.

Glacier Bay Camp to Sloko Bay, by boat, 18 miles; and by trail to Sloko Lake, some 2½ miles.

One needs good strong clothing, hob-nailed boots, Kodak and plenty of films, a good pair of field glasses and a suitcase for personal effects. I furnish the rest needed.

I will not take chances on the lake when it is too rough to be safe. I shall expect each one to help me slightly at camp duties and cooking, as I can not do everything alone, though willing to do all I can.

Pure air, pure water, plenty to eat and a good camp bed—a good time in a new, wild, uninhabited region; and there is no finer scenery to be found anywhere in the world.

The glacier is one of the largest and, from the top of Mussen Mt., over half of the glacial region can be seen—a great ice plain spread at your feet. We are liable to see wild moose, goats and bear on these trips.

My price is $6.00 per day for each person, and I furnish everything necessary—about what you pay for fare alone at a good hotel.

The trips will be from six to ten days' duration, as there is much to see and many places of interest to visit.

I will say, in conclusion, that very few people have seen this region, except from a distance, that few tourists have been on the great ice, and that I have trails of my own making to places that no one has as yet visited. There is surely a good time to be had here for those who are not averse to camp life and mountain climbing.

Your route is via Skagway, Alaska, and the White Pass and Yukon Railroad, and boats to Atlin, B.C., Canada.

L. C. Read,
Photographer and Guide,
Atlin, B.C., Canada.

Climbs in the Neighborhood of Lake Louise

On August 1st I climbed Haddo and Aberdeen by myself, leaving the Château at 4.30 a.m. I reached the cabin in Saddle Back Pass at 6.00 a.m. At 6.30 began the traverse to the foot of the glacier coming down between Sheol and Haddo, followed a rib of rock dividing the glacier, then the glacier itself, up to the foot of a deep, curved snow couloir on the west, followed the rocks on the north side of the couloir to the foot of the east face of the final peak and up it to the summit, which was reached at 11.10 a.m. Left at 11.40, descended to the Aberdeen Glacier and reached the summit of Aberdeen over the steep snow and ice ridge at 12.30 p.m. Descending by the usual route along the south arête, I reached Lefroy Glacier close under the Mitre Pass, and was back at the hotel at 5.30 p.m.

On August 4th, Rudolph Aemmer and I left the hotel at 4.08 a.m., reached the Saddle between the north peak of Victoria and Collier at 10.30 a.m. After half an hour's rest, made the north peak of Victoria in one hour and thirty minutes. Leaving the summit at 2.30, we followed the ridge to the summit of Collier, which was reached at 3.15 p.m. I felt too tired to go on to Pope's Peak, although we started in that direction, and so descended the southeast face of Mt. Collier to the upper Victoria Glacier, making the Château in a little under four hours.

On August 12th, climbed the Devil's Thumb with Dr. Withmer, from Philadelphia, and Mrs. Fynn.

On August 13th traversed Mt. Whyte with Dr. Withmer, leaving the hotel at 7 a.m., reaching the summit at 11.55 and descending the southeast face by way of the couloir between the two highest summits, in three hours to the glacier trail.

On August 15th, Rudolph and I left the Château at 12.55 a.m., reached Abbot Pass at 5.30, rested until 6.05, reached Lefroy after a good deal of step cutting at 9.30, rested until 10, and were back at Abbot Pass at 11.30. Left at 12.05 for Victoria, which we reached by the ordinary route at 4.20 p.m. The going was slow and sometimes quite difficult, owing to great masses of fresh snow. Leaving at 4.58 p.m., we were back in Abbot Pass at 8.15 p.m., picked up our rucksacks, and five minutes later were on our way down to Victoria Glacier, reaching the trail at 9 p.m., and the hotel at 11.10 p.m.

On August 17th, traversed Mt. Whyte with Mrs. Fynn and Rudolph. On the way down, followed the west arête to near the bottom of the gap between Mt. Whyte and the unnamed peak west thereof, and then took to the southeast face, reaching the glacier trail near the spot where it leaves the moraine on its way to the plain of the Six Glaciers.

On August 22nd, left hotel at 6.10 a.m. with Dr. Withmer and Mrs. Fynn. Reached Abbot Pass at 12.10 p.m., rested until 1.00 and descended to the south. Made O'Hara Camp at 4.50 p.m.

On August 23rd, we left camp at 8.30, reached Opabin Pass at 12.15 p.m. and Prospectors' Valley at 1.35 p.m. After an hour's rest started for Wenkchemna Pass, which we reached at 5 p.m. Following the upper trail we made the Moraine Chalets at 7.40.

On August 25th, left the hotel at 6.30 a.m. with Dr. Withmer, reached Mitre Pass at 10.15, left at 10.45 and made the summit of Mitre at 12.15. After an hour's rest reached the Pass at 2.43, remaining until 3.30 p.m., and were back at the hotel at 6.10 p.m.

Photo, C. G. Wates

FIDDLE CREEK CANYON
Near Pocahontas

Telephoto, C. G. Wates

THE WATCH TOWER (still unclimbed)
Cataract Valley

On September 1st, left Moraine Chalets at 4 a.m. with Dr. Withmer and Rudolph. Reached the col between Pinnacle and Eiffel at 7.15 in bad weather. The mountain was covered with fresh snow, the temperature was very low, and we had occasional flurries of snow. Leaving the col at 8.20 we found the rocks in the lower part of the climb all iced, and were unable to use climbing shoes. Reached the summit of Pinnacle at 10.15, remaining until 10.40, and were back in the col at 12.20. In the meantime Mrs. Fynn had left Moraine Chalets at about 8.00, and we now saw her high up on the Eiffel ridge and about on the level with our col, so we traversed in her direction, reaching the Eiffel ridge at 1 p.m. After thirty-five minutes' rest we completed the ascent of Eiffel in a snowstorm, reaching the summit at 3 p.m. At 3.15 we started down with the snowstorm still raging and reached Moraine Chalets at 5.45 p.m.

VAL A. FYNN.

[Mt. Collier lies to the N.E. of the North Peak of Mt. Victoria, between it and the secondary summit of Pope's Peak. The name has not been authorized by the Geographic Board and does not appear on the maps. It is called after the two brothers who first climbed it.]

Roche Miette

Mr. C. G. Wates last summer journeyed to Pocahontas, west of Edmonton, hoping to climb Roche Miette, which rises 5,000 feet above the surrounding country and terminates on the west in a precipice which drops 2,000 feet from the summit, sheer and smooth.

Bad weather prevented the ascent, but Mr. Wates and his companions plotted out a route which may be useful to other climbers.

"Passing the Punch Bowl Falls, we skirted the upper side of a series of couloirs and followed the N.E. spur of the mountain to tree line. Here we got a piece of real rock work which tried our skill, the rock being exceedingly rotten. Reaching the top of this cliff we crossed a scree slope to a snow pass which dips down on either side to Fiddle and Miette Canyons. From the farther side of the saddle the summit rises steep, but quite practicable."

Lieutenant H. J. Palmer

We regret to record the death of Lieutenant H. J. Palmer, D.C.L.I., who was killed in action at Villers-Bretonneux, near Amiens, on March 29th, Good Friday last. He had been in the thickest and the fiercest of the fighting in the retreat from St. Quentin, and was inspecting a trench when he was hit by an enemy sniper and instantly killed. Members who were present at the early Annual Camps will remember "Jack Palmer" of Banff, foremost among the scouts. He went to England to study medicine at Guy's Hospital and joined the D.C.L.I. Very many letters of appreciation and regret were received from comrades and friends by his parents. To them, members of the Club since its inception, we extend our sincerest sympathy.

Club Collections

At the Cataract Valley Camp a collection was made in aid of the Royal Flying Corps Hospital, which realized $85.75. At the New Year a collection was started for tobacco to be sent to soldiers on active srevice. Thus realized $82.90, the contributions being limited to one dollar.

Maps Missing from the Library at the Alpine Club House, Banff

The Librarian has brought to my attention the fact that maps attached to or accompanying valuable books in the Club Library have been taken away by visitors to the Club House using these books.

It is much to be regretted that the depredations of such light-fingered gentry will, should further thefts be noticed, necessitate placing the books under lock and key and inaugurating a system of registration.

The privilege of free access to the Club Library has always been in force and that there would be such a lack of honour has never occurred either to the Librarian or myself, and has been unknown until it became necessary to use the missing maps for reference purposes. Unfortunately the sins of the few generally react upon the many.

The maps taken away are:—

Map attached to Stutfield & Collie's "Climbs and Explorations in the Canadian Rockies";

Map in pocket Wilcox's "Rockies of Canada."

A. O. Wheeler, Director.

REVIEWS

The Life of Sir Clements Markham—By Sir Albert H. Markham*

The life of Sir Clements Markham, the eminent explorer and geographer, written by his kinsman, Admiral Sir Albert H. Markham, is one of the books proper to an Alpine Club's library. Admiral Markham has presented his career and his character with distinctness, revealing an explorer and man to win the admiration and regard of every reader in our Alpine Club. His effectual interest in Polar exploration, Arctic and Antarctic, from the search for Sir John Franklin's remains in 1850 to Scott's expedition in 1910, is a story to make any man eminent. But Sir Clements Markham has other claims on the gratitude of his countrymen and of his Empire; he it was who conceived and carried to a very fruitful end, the large and difficult enterprise of transplanting from South America to India the cinchona tree. Several chapters of the book are taken up with the expeditions in South America and his work in India. It is a story of exceeding interest hitherto unknown to many who knew Sir Clements as an active promoter of Antarctic discovery.

Clements Markham began his career in 1844 as a cadet on the flagship Collingwood under Admiral Sir George Seymour, Commander-in-Chief of an expedition to the Pacific South American coast, being then a lad of fourteen. His much dreaded but highly successful academic examination consisted of writing out the Lord's Prayer! Indeed, his paper was taken away before he was half through the task, and he was told that he had passed! The physical examination was equally brief; a fat old doctor made his appearance and, pinching him violently in the wind, asked "if it hurt?" It did not hurt, and he was reported as "medically fit for service."

Young Markham was one of the first to be called "Naval Cadet," officers of that rank in the Navy being termed "first-class volunteers." While on the Pacific Station, he came under the influence of an officer who impressed upon him certain essentials to success in the Navy: A good naval officer was not only a good sailor, but he was well informed in history, geography and poetry. He recommended "Paradise Lost" because it was the "grandest poem in our language and the richest storehouse of good English words and phrases."

Markham was nearly four years in Pacific waters, improving every opportunity that offered for education on sea or land. A visit to Lima quickened his interest in ancient Peru; and horror at the severity of corporal punishment in the service, together with a longing to become a geographer and explorer, made him decide to abandon the Navy. After a furlough at home he joined the Mediterranean squadron. There, a close study of Prescott's "Conquest of Peru" begat a desire to investigate the remains of the Incas, but meanwhile he spent a year and a half in Arctic seas searching for the remains of Sir John Franklin, doing ample share of

*John Murray.

the sledgework. He read much that winter, notably on Arctic history, and he wrote a tragedy on the last of the Incas.

The expedition reached England on October 1st, 1851, and Markham left the service. His mind was on Peru, and it came about that his father, never a rich man, gave him £500 and his blessing. In August, 1852, he set sail on his lonely quest, travelling by way of Halifax and Boston, where he visited and received ardent moral support from Prescott; thence to New York and down the coast, across the Isthmus; thence to Callao and to Lima, to Nasca and Cuzco and Lima again, so crossing the Andes in two different directions. He accomplished a prodigious amount of study and investigation during this expedition, which was one of fascinating adventures. He saw cultivated on the slopes of the Andes, where they flourished luxuriantly, the cinchona trees, whence quinine is obtained, and his second expedition to the Andes was concerned with these trees.

How he conceived a scheme to bring cinchona plants and seeds, sufficient to start a large plantation at the same altitude and temperature and on similar soil in India; how he kept his secret and packed the plants which he conveyed over Andean passes 13,000 feet high, protecting them from change in temperature and from robbery, is a tale of thrilling interest. It was Clements Markham who brought to fever-stricken India the medicinal forests of cinchona. And he turned the healing enterprise into a profitable commercial venture—for the Government of India, mark you, not for private profit. To this day there is a large revenue accruing to that Government from the trade in quinine. With shame the reader thinks of bacon to feed the Allies and fighting men, and of Canadian profiteers.

One chapter is devoted to Sir Clements' work in India; one to the Abyssinian War, he being geographer to the expedition sent to Abyssinia under General Napier; and others to his intimate and active connection with the Royal Geographical Society and with Arctic exploration. Later in life came his work for Antarctic discovery. It was to him that Colonel Longstaff (father of Dr. Longstaff, the mountaineer) wrote, placing a gift of £25,000 in his hands for the "Discovery" Expedition, a gift to which he later added £5,000. Never a rich man, Sir Clements used his great organizing powers to further polar exploration, and he was behind expeditions that cost enormous sums. Rich men and governments trusted him. He was the friend and cousellor of Scott, whose death in harness on the Antarctic ice was a severe personal loss. The last entry in his diary was: "Sturdy little Peter Scott came and walked with us in the Square Garden. I often think of his dear father and the men he has trained to fight his country's battles."

The revival of Antarctic exploration was due to Markham. They named a Polar Mountain for him, and a glacial "bluff" for his wife—"Minna Bluff." All through the years of his geographical activities, he was writing or editing books. The list is a very long one. His work for the Hakluyt Society alone had given him rank in literature. His first love, which he never abandoned, was Peru; and his second, Polar exploration. He died on January 29th, 1916, at the great age of eighty-six, after a life of hard, happy useful work.

It is a biography of singular interest, written "with love," the reader well knows. The portrait drawn is of a man of Christian ideals, with great talents and with an enormous capacity for work.

At the time of his death, says Admiral Markham, he was the greatest geographer living.

ELIZABETH PARKER.

Blazing the Trail through the Rockies—By Noel Robinson*

The story of Walter Moberly and his share in the making of Vancouver is a very remarkable sketch of a very remarkable man. It claims to be by "Noel Robinson and the Old Man Himself." In reality, it is compiled from a series of interviews with Mr. Moberly by Noel Robinson, and the results of these interviews have been pieced together into a more or less connected history of the main features of Mr. Moberly's activities from the time he first set foot in British Columbia until shortly before his death, including a short sketch of his life prior to that time.

The reminiscences set forth appeared, first of all, Sunday by Sunday, in the Vancouver News-Advertiser**, but have recently been embodied in pamphlet form and printed by the News-Advertiser.

The pamphlet, though somewhat kaleidoscopic in its arrangement, is of fascinating interest: First, because it sets forth the career of a pioneer of British Columbia, who had much to do with the development of the Province in the very early days when all was in the rough; and not alone with the affairs of the Province but with the initial stages of the great transcontinental highway of traffic from ocean to ocean, known the world over as the C.P.R.

Second, the story incidentally brings into its limelight many of the now historic characters of those early days of the Crown Colony before it joined the Confederation—the officers of the Royal Engineers and the men of the Old Brigade.

Third, the pamphlet is most delightfully illustrated and is replete with scenes of those thrilling times. Noticeably may be mentioned: New Westminster in the early sixties; the Mint, New Westminster, 1862; the Old Brigade; old view of Victoria, showing the bridge across James Bay and, as a sheet of tidal water, the site on which the C.P.R.'s palatial hotel, The Empress, now stands. There are several good pictures of the old Cariboo Road, clinging high in air to the precipitous sides of the Fraser Canyon. A group showing British Columbia's first Legislative Assembly is of special interest. The driving of the last spike of the Canadian Pacific Railway by the late Lord Strathcona (then Sir Donald Smith) is of historical importance. At the end are a number of views of Vancouver, both of old and more recent date; two specially worthy of note are: the meeting of Vancouver City Council after the great fire of 1886 in an old tent, which did duty as a city hall, and J. W. Horne's real estate office in the hollow of an immense fallen cedar after the fire.

Interspersed through the text are many portraits of men whose names have gone down to history in connection with the early days: the Old Man himself, Mr. Walter Moberly, Sir James Douglas, Sir Joseph Trutch, "Cariboo Cameron," Major Rogers, Lord Strathcona,

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*The News-Advertiser, Vancouver, B.C., 25c.

**The News-Advertiser as a newspaper is no longer printed and applications for the booklet do not evoke a reply.

Mr. Henry J. Cambie and the Hon. Edgar Dewdney. All the scenes and portraits mentioned are introduced in connection with incidents of Mr. Moberly's career.

Walter Moberly was born in 1832. His father was a retired post-captain of the British Navy, who fought in many battles of the Napoleonic wars, and his mother was a Polish lady. There was a large family of sons, six or seven. Four of these, George, Frank, Clarence and Arthur, it has been my pleasure to meet and with two, Walter and Henry, I have had correspondence.

Mr. Walter Moberly came to British Columbia in 1858 with letters of introduction from Sir George Simpson, Governor of the Hudson's Bay Company, to Sir James Douglas, Governor of the Colony, by whom he was warmly welcomed and soon set to work as architect and engineer upon the construction of the City of New Westminster, or Queensborough as it was first called, where there was not even a shack when he began work.

Moberly's outstanding work was his fight for and share of construction of the old Cariboo Road, a wonderful piece of engineering, giving access to the far away Cariboo gold mines. The story of the difficulties overcome in getting the work started, the scarcity of funds to carry it on and the financial ruin it caused to Mr. Moberly's private purse are told in thrilling detail, mingled with many delightful incidents and anecdotes.

The road was built; and to-day, as one flies swiftly down the Fraser Canyon in a comfortable observation car of a Canadian Pacific or Canadian Northern express train on one side or the other of the river, as the case may be, fragments of the old road bed are still to be seen high on trestles or carved from the precipices that overhang the swirling torrent below. In imagination, you can still see the long trains of pack mules and hear their jingling bells, or listen to the crack of the whip as a teamster with abundant warmth and eloquence urges his four or six teams along the narrow pathway as confidently and as casually as though on a wide prairie road, and little heeding the fact that a bare foot or two separated him from an awful descent to eternity.

Moberly's fixed idea, that from which the Cariboo Road was born, was the finding of a route for a railway to connect the Pacific seaboard with the railways reaching out westward from the Atlantic. In 1865, he discovered Eagle Pass, through which the C.P.R. now crosses the Gold Range. Asked what gave him the impression that there might be an opening through the mountains there, he replied: "It was the eagles. I watched them as they flew up the Columbia and I saw them make a big bend off. I knew eagles always follow along a stream or make for an opening in the mountains and I just followed the direction they took, with the result that I discovered, and, I think very appropriately named, Eagle Pass." Near Craigellachie, where Sir Donald Smith drove the last spike of the C.P.R. on the 7th November, 1885, Mr. Moberly blazed a tree and wrote upon it in chalk the words: "This is the pass for the Overland Railway." That was in 1865.

The same year, with his assistant, Mr. Alfred Perry and a party of Indians, Mr. Moberly proceeded up the Illecillewaet River valley to the head of its north branch, which ended in a cul de sac. He wished to explore the valley of the southerly branch, which the C.P.R. now follows through the Selkirks by Rogers' Pass, but it was

late in the year, winter was at hand and the Indians refused to go farther. Moberly claims that he sent his assistant up the southern branch the following year and that Mr. Perry then discovered the pass, which discovery is generally attributed to Major Rogers, after whom the pass has been named.

In 1871 Moberly became locating engineer in charge of the mountain division of the C.P.R. under Sir Sandford Fleming, Chief Government Engineer. He was busy for this and part of the following year exploring a route through or around the Selkirks by the Big Bend, and had ascertained the feasibility of a location up Blaeberry River, via Howse Pass, to the Saskatchewan and so to the prairies, when he was instructed to leave this location and proceed north with all his survey parties as it had been decided to build the road through Yellowhead Pass. Intensely disappointed, but obedient to orders, with immense difficulty, he overcame almost insurmountable obstacles of mountain travel and winter weather, transferred his operations to Yellowhead Pass and commenced work there. He was never in sympathy with the change and, shortly after, Mr. Marcus Smith having been placed in charge of the work, Moberly severed his connection with it.

Mr. Moberly's explorations and locations were, to a considerable extent, adopted as the route over which the line of the first transcontinental railway now runs but, personally, he had no further executive connection with the work of construction, although he did his utmost in various ways to get the line carried through Winnipeg, and used his influence fully to have it built along its present location from Revelstoke to Vancouver.

Mr. Moberly did not again take part in great public enterprizes. The good work that he did and the prominent part he took in opening up and giving access to the resources of the interior of British Columbia were never fully recognized. To realize the difficulties he encountered and the years of toil, hardship and privation he endured it is necessary to visit the wilderness of mountains, the trackless forests and jungles and the dangerous waterways comprising the territory over which he worked; and even then, the strides of civilization have been so great of recent years that it is difficult to picture these wilds as they were when only inhabited by Indians and wild beasts, when the influx of the white man was a slow and difficult process.

It can be said, only with profound regret, that Mr. Moberly died a poor man, the largest portion of his personal means having been spent in carrying out enterprises for the good of the country by which others reaped a full profit.

Noel Robinson tells the story of "Blazing the Trail through the Rockies" in a most attractive manner. It is full of adventure, racy anecdotes and personal incidents that bring out the character of his hero very vividly, and everyone interested in the history of British Columbia and of the construction of the Canadian Pacific Railway should read it and preserve it in his library.

I may add that at the time I was writing "The Selkirk Range of British Columbia" Mr. Walter Moberly very kindly loaned me his only remaining copy of a delightful little pamphlet published by him in London, England, in 1885, entitled "The Rocks and Rivers of British Columbia." This is a personal sketch of his work in British

Columbia and bears out fully all that is written of it in "Blazing the Trail."

Mr. Moberly's memory is well perpetuated in the naming of topographical features throughout the region over which he worked. Moberly Peak and Moberly Station lie along the C.P.R. quite close to the crossing of the Blaeberry River, and Moberly Lake and Moberly River, tributary to Peace River, are to be found farther north.

"Blazing the Trail through the Rockies" ends with a tribute to Mr. H. J. Cambie, "explorer and railway builder," and one of the pioneer engineers of the Canadian Pacific Railway who, as Noel Robinson puts it, "is admitted to be the Grand Old Man of railway construction in the Province." A number of delightfully interesting reminiscences by Mr. Cambie are given, which introduce the names and personalities of many men who have been and are to-day connected with the building up of the Province and with great commercial enterprises of the Dominion.

ARTHUR O. WHEELER.

The Mountains of California—By John Muir*

John Muir was the greatest and noblest mountaineer that the United States has ever known. With the most ardent enthusiasm and love for the mountains, he combined the deep insight of a scientific mind that studied their formation and gloried in their trees and flowers. His true home was in the heart of the Sierra Nevada mountains, and he always felt curiously lost in a city.

Starting from San Francisco in the days before the flower fields of the central valley of California had been ruined by the plough, he journeyed across their wide expanse afoot to the Yosemite Valley. No one who has not roamed amid the mountains of California can realize their peculiar charm. They are distinctively a range of light, imparting as it were to the mountaineer the full, rich happiness of the sunshine which they continuously receive. They are peopled with the oldest and most majestic of trees, the sequoia; while their forests of pine and of fir are unsurpassed. Everywhere are magnificent glacier-polished domes and deep rugged canyons through which there leaps and foams the clearest of singing water. No falls in the world are finer than those which liven the Sierra landscape, and no flowers are more exquisite in beauty than those which carpet the valleys and climb toward the summits of the mountains.

John Muir yielded to the charm of these mountains of God and spent his life amid them. Not until he had become their intimate friend, and their spirit had long mingled with his own, did he write at length about them. In the pages of the Century magazine there finally appeared many of the chapters which in 1894 were collected in book form under the title of "The Mountains of California." The beauty of Muir's style is unequalled in the literature of nature description, and he has a marvellous ability to convey his thoughts and feeling to the reader. Such variety of language, and such inner interpretation of the Spirit of Nature comes only with the truest love and the deepest insight. Writing was slow and laborious work

*Century, 1911, $2.00 net.

for Muir, but his message is of surpassing value and interest. Any one who reads his books with sympathetic understanding may wander over these mountains always at home, for he will find them his friends through the heart of John Muir.

In this first volume of Muir's writings he tells us of the glaciers which have shaped and polished the range; of his tireless rambles in the high Sierra; of their forests, lakes and meadows; of the squirrels and the birds; and always of the flowers. To him their silent language was ever audible, for his love was that of a lifelong friendship. I have roamed over many mountains far and near, but I have found none so lovable, none whose ability to impart true joy is greater than the mountains of California.

LE ROY JEFFERS.

The Cruise of the Corwin—By John Muir*

In 1881 John Muir joined the U.S. Revenue Cutter Corwin on an Arctic cruise in search of the ill fated Jeannette, which had sailed with Captain DeLong on a voyage of exploration in the summer of 1879. Search was also made for two whalers which had disappeared. The Corwin skirted the Alaskan and Siberian shores, stopping at all the native villages for information. This gave Muir exceptional opportunity to study the botany of the region and to observe its glaciation. While the expedition failed in its object, the scientific world was rewarded by Muir's report on the Glaciation of the Arctic and Subarctic regions visited, and by his Botanical Notes which were published by the government.

Professor Bade has compiled the account of the voyage from letters which John Muir wrote to the San Francisco "Bulletin," and he has included material from Muir's journal, together with an appendix of Muir's scientific notes of the trip. The book contains much information about the life and customs of the natives. The Eskimos are an apparently happy race when left to themselves. When they have food they eat as long as they desire, then sleep without regard to time, and have great endurance on their hunting expeditions.

On nearing Wrangel Land the steamer gave chase to three polar bears who were on an ice floe, and who doubtless made their first acquaintance with man. Five men enjoyed the sport of shooting them about forty times before they succumbed. Would that all sportsmen might read Muir's account as he flames forth. "They had no chance whatever for their lives, and the whole affair was as safe and easy a butchery as shooting cows in a barnyard from the roof of the barn. It was prolonged, bloody agony, as clumsily and heartlessly inflicted as it could well be. . . . How civilized people, seeking for heavens and angels and millenniums, and the reign of universal peace and love, can enjoy this red, brutal amusement, is not so easily accounted for. . . . The frame of mind that can reap giggling, jolly pleasure from the blood and agony and death of these fine animals, with their humanlike groans, is too devilish for anything but hell. Of all the animals man is at once the worst and the best."

LE ROY JEFFERS.

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*Houghton, 1917, $2.75 net.

Two Summers in the Ice Wilds of Eastern Karakoram—

By Fanny Bullock Workman and William Hunter Workman*

This is a well published book, giving a detailed account of the explorations of Dr. William Hunter Workman and Mrs. Fanny Bullock Workman, extending over an area of nineteen hundred square miles of mountains and glaciers in the ice-wilds of the Eastern Karakoram during the summers of 1911 and 1912.

The book is magnificently illustrated with one hundred and forty-one reproductions of photographs taken by the authors, and three maps which show clearly the route of travel by the explorers. Of the photographic illustrations it is not too much to say that they are superb and indicate clearly not alone the mighty vastness of these great ice solitudes full of Nature's most august wonders at her outposts but also a tribute to the skill and science of the explorers. Specially fine are the following: The cloud from an avalanche descending between two granite peaks on the Bilaphond Glacier; the view from Junction Mountain, opposite page 156; Mt. Lakshmi on the south side of Tarim Shehr Glacier; panorama of Tarim Shehr Glacier; panorama of head of Peak 36 glacier; Peak at north head of Rose Glacier; Telephoto of King George V. group from Ledge Camp; Lake in centre of Rose Glacier; Peaks on Peak 36 Glacier; Granite monolith on west side of Bilaphond Glacier showing fine specimens of glacier tables.

Many of the pictures are delightfully artistic and the authors have secured with them a splendid idea of mountain atmosphere; specially so in the view showing the massif of Peaks 35 and 36 from the centre of Rose Glacier (Siachen). The Hawk Peak, a telephoto from thirteen miles distant, is very fine.

By no means least wonderful and instructive are the illustrations of ice and snow formations in the last part of the work dealing with the physiographical features of the Bilaphond, Siachen and Kaberi Basins and Glaciers. Of these the panorama of thirty miles of Siachen Glacier taken from Junction Mountain is truly magnificent, and conveys a very striking impression of the immensity of the glacial rivers of the region. The White Ice-Stream on Rose Glacier showing the sérac penitente is unique. Also may be included the picture showing thin debris or pocket-penitente on Rose Glacier and that showing séracs on Rose Glacier dissected by heat; in both of these the artist has caught the luminous transparency of the ice in a most charming manner.

In referring to the pictures as above only the best have been touched upon. It is a wonderful collection and no mountaineering or geographical library should be without the volume.

The work is divided into three parts.

Part I., by William Hunter Workman, M.A., M.D., deals with the exploration of the Sher-pi-gang, Dong Dong, Masherbrum, Khondokoro, Chogolisa and Aling Glaciers and their basins. In stating the lines of travel and setting forth the scope of the exploration and its results, Dr. Workman has incidentally said much that is of deep interest about the native dwellers on the borders of the vast solitudes explored, and has brought to light their customs and method of life.

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*E. P. Dutton & Co., New York.

If a criticism were permitted of the narrative of an explorer of so great reputation and such an extended career, it would be that expeditions of this sort have become to him so matter of fact that most of the routine detail and little incidents of travel which delight the lay reader have been omitted, or passed by with a casual reference as of every day occurrence, which indeed they are to Dr. and Mrs. Workman.

Part II. is by Mrs. Fanny Bullock Workman and deals with the conquest of the Great Rose, or Siachen, the world's longest non-polar glacier. Mrs. Workman, in addition to her world renown as an explorer and mountaineer, has also the power to impart to others clearly and interestingly her acquired knowledge and impressions. Chapter IV., which recites the legend of the Rose Glacier or Siachen is very interesting. It also refers to the previous visit to the locality by Dr. (Capt.) Longstaff, the well known explorer, a life member of the Alpine Club of Canada.

Part III. is by Dr. William Hunter Workman. It deals with the physiographical features of the Bilaphond, Siachen and Kaberi Basins and Glaciers. This portion of the work is of great scientific interest and adds much to the valuable information already given to the world by Dr. Workman from data supplied by his previous explorations. As already stated, the illustrations for this part are very excellent and are as near perfection as can be had. The views of rock and ice formations so graphically depicted reflect the greatest credit on the photographer and lend much interest to the text.

An Appendix gives:—

(1) Notes on rock specimens collected by the expedition on the Siachen Glacier, by W. Campbell Smith.

(2) Notes on rock specimens collected by the expedition in the Bilaphond and Kondus Bassins, and on the Khondokoro and Masherbrum Glaciers.

(3) A note on the construction of the Siachen map by C. Grant Peterkin.

There is also a note by Fanny Bullock Workman explaining her status in connection with the expedition.

A sketch of the triangulation control and details of the survey made closes the work. There is a very fair index which necessary adjunct is so often omitted in works of this nature.

Apart from the story of the exploration, a feature of great interest is the information given concerning the methods of camping at such high altitudes and in the midst of a wilderness of snow, ice and the highest rock peaks in the world. The explorers have evidently reduced this necessity to a science.

As already stated there are three maps. Two are good topographical maps, well drawn and easily read, with the routes of travel clearly shown upon them by red lines. The third is a sketch map of Kashmir, showing the routes of Dr. and Mrs. Workman's explorations from 1898 to 1912 inclusive.

Map No. 1 accompanies Dr. Workman's account of the explorations in 1911-1912 and illustrates the Hushe and Kondus Glacier systems.

Map No. 2 is of the Siachen or Rose Glacier and its tributaries, and accompanies the part of the work specially written by Mrs. Workman. Both maps are based upon the trigonometrical survey of

India supplemented by observations and photographs of the Workman expedition.

The other members of the expedition, apart from native assistants, were as follows:—Cte. Dr. Cesare Calciati, who acted as topographer; Dante Ferrari, an assistant; Cyprien Savoye, guide; Simeon Quaizier, Cesar Chenoz and Emile Gléry, porters; the last four from Courmayeur.

Illness of a member of the party delayed the start in 1911 and many minor delays occurred through the uncertainties of native assistance. Notwithstanding, with the exception of the tragic accident at Ali Bransa, resulting in the death of Cesar Chenoz of Courmayeur through a fall of eighty feet into a crevasse, a graphic account of which is found in chapter II., part II., the expedition seems to have been highly successful and the thanks of the geographic, scientific, mountaineering and, by no means least, the artistic world are due to Dr. and Mrs. Workman for the valuable addition they have contributed to the already published knowledge of the great ice region of the Karakoram.

ARTHUR O. WHEELER.

Voyages on the Yukon and its Tributaries—By Hudson Stuck*

Mountaineers will remember Archdeacon Stuck's climb on Denali (Mt. McKinley) and welcome a new book of travels from his pen. This time we have an account of a voyage up the coast of British Columbia to Skagway and across the Height of Land to the head waters of the Yukon. Here they embark on the launch "Pelican" and start the real work down the 2,200 miles of river to its mouth, besides "side shows" up the tributaries Chandalar (Gens de Large), Tanana and Koyukuk.

The steamboat trip to Skagway is memorable with its vistas of fiords and mountains, its curious Indian life and touch of the romance of the navigator Vancouver; but the real interest of the book centres on the Yukon River.

For ten years Archdeacon Stuck has travelled the Yukon country establishing, renewing and heartening the Church Missions on the River. Books of tourist travel seldom convey more than a passing glimpse of country. Here we have an intimate picture of the pioneer life: the extremes, the very best and the very worst types of man, cut loose from all restraints of civilization, in pursuit of the most demoralizing occupation in the world—the Eldorado of placer gold.

The Yukon River is the open road of the whole life and activities of the Canadian Yukon and Alaska. Rafts, canoes and steamboats of all kinds ply the road and make the most of the short season.

As far as the White River the mountains are hard rock, the water clear and the scenery impressive. Below that point the hills are round shouldered, with rocky ranges breaking into view at intervals. At Eagle we pass into Alaska. At Fort Yukon the river turns west and south through the delta of the Yukon Flats, where the mosquito reigns supreme. The whole country shows signs of

*New York, Charles Scribner's Sons.

inundation and sudden changes from tropical to arctic climate. Our author rightly points to an entrancing field for some geological student of the type of Hugh Miller, accurate but interesting, to carry forward the work of Robert Campbell and the old discoverers.

We catch glimpses of the various forms of Yukon government, from the Hudson's Bay Company, through the Mounted Police to the majesty of the law. We are glad to see that our author heartily agrees with those who hold that under Yukon conditions the Mounted Police system is the best, and gives more substantial justice than primitive law courts run by "outlander" lawyers.

We must leave our readers to follow the Pelican in its wanderings and to make friends and acquaintances by the way. This—the human interest—is the vital part of the book. We realize the life of this strange medley, and so are justified in our travels.

We do not forget that Archdeacon Stuck is a mountaineer of the best. We have room for just one appealing quotation.

"From far out on the lake, so that he had its blue waters as a foreground, I would suddenly present to the traveller the best view of mountains in all North America, and surely one of the noblest in the whole world. From that level, less, I think, than a thousand feet above the sea, I would show him the sheerest, most precipitous face of Denali and Denali's Wife, companion peaks, rising by escarpment upon escarpment to jagged pyramids that thrust themselves, one nearly four miles and the other more than three miles into the 'stainless eminence of air'; with their buttresses and ridges, their connecting arcades, their steep slopes and awful, headlong pitches, all glittering in perpetual snow."

Before parting with our author, we must make some brief reference to the object of his travels. The scenery and the experiences by the way are engrossing to the reader, but the native population, the adjustment of their lives with the advent of outside civilization, their future in this world and the next—these great matters are the objects for which Archdeacon Stuck devotes his life and well being.

The highest praise we can give this book is that the voyage of the Pelican shows that some one, at any rate, carries high the flag of the Christian Missionary Spirit.

We are glad he is a mountaineer.

H. B. MITCHELL.

The Bird Study Book

By T. Gilbert Pearson*

(Secretary, National Association of Audubon Societies)

To begin with, this instructive and useful volume is very attractively published. The print is large and easily read. It has a charmingly life-like coloured frontispiece of the Wood Thrush; there are sixteen excellent photographs, all of unusually interesting bird subjects, and many good pen and ink sketches explanatory of the text. If I may be permitted a criticism, it is that the book is so full

*Doubleday, Page & Co., Garden City, New York, 1917, $1.25 net.

of information, and so useful for general reference, that a detailed index would have been a valuable adjunct.

That the author knows his subject thoroughly, both from personal study and from practical observation, goes without saying; in addition he has presented his knowledge in such a simple and interesting form that not alone the grown up reader but the youngest child, with an ordinary amount of intelligence, cannot fail to enjoy every chapter of it. I know I did, and also derived a very large amount of information from it—information that everyone, from those engaged in the most useful and productive forms of agriculture to the dilettante in Nature study, from the dweller in the city to the habitué of the country, should possess.

The majority of books dealing with the study of birds are so mingled with scientific nomenclature, technical description and measurements, species and sub-species that, to the ordinary reader they are to a large extent a study of a foreign language. This work, on the contrary, omits the classics of the subject altogether and deals only with the everyday names, appearance and habits of the birds of the North American Continent, to which have been added many vivid little incidents illustrative of such habits.

Instructions are given how to observe the actions of birds so as not to unduly alarm them while under observation, and their nesting habits and domestic life are dealt with. The chapter of migration is of great interest and is very instructive. How birds that do not migrate live in the winter and succeed in obtaining food and the casualties occurring from inclement weather are clearly shown. To the agriculturist the economic value of birds is pointed out and is good solid information. The effect of civilization upon the bird supply is made apparent, and the traffic in feathers is shown to be a reason for the growing scarcity of many species and the extinction of others. The author says: "In 1886 Dr. Frank M. Chapman walked through the shopping district of New York City on his way home, two afternoons in succession, and carefully observed the feather decorations on the hats of the women he chanced to meet. The result of his observation, as reported to 'Forest and Stream,' shows that he found in common use as millinery trimming many highly esteemed birds, as the following list, which he wrote down at the time, will serve to show: Robins, Thrushes, Bluebirds, Tanagers, Swallows, Warblers, Bobolinks, Larks, Orioles, Doves and Woodpeckers. In all, the feathers of at least forty species were discernible."

One chapter deals with bird protection laws and their enforcement, and another with bird reservations. The last two chapters tell of the making of bird sanctuaries and the teaching of bird study to children.

The scheme of the book is excellent and carries the reader along from the life and habits of the everyday birds to those of the rarer and more elusive species, deals with their usefulness and friendly relations with mankind, shows how many species have become extinct and finally gives the measures that are being taken to preserve the species that are still common to most localities. The book should be in every library, for it will prove a rare treat to all readers.

I gave the book to my father-in-law, Professor John Macoun, F.R.S.C., F.L.S., Naturalist to the Dominion of Canada, to read and asked him to give me a few words upon it. This is what he has written:

"I have never read a bird book with more pleasure and profit, because the author speaks unsparingly from his own experience and knowledge, judicially mixed with the observations of others. I consider it a book for both old and young, male and female. It is valuable to the old, as it shows them the great value of birds in the economic life of the world, and to the young it opens a never ending vista of the bird world by which we are surrounded. A perusal of this book will immediately awake in them a desire for more scientific works which give the life history of any bird they see and deal on to a wider knowledge of bird life in general.

"It appeals to the city boy or girl just as much as to those in the country if they desire to use their surroundings to extend their knowledge or gratify their youthful desire for some change from the humdrum life of the streets. There are many references to birds in winter and summer that would help the city boy or girl very much in more ways than one.

"References to particular birds are most interesting and instructive in respect to their food, nesting habits and migrations, etc."

ARTHUR O. WHEELER.

On the Headwaters of Peace River—By P. L. Haworth*

It is the custom to talk of the United States as a new country. This has been repeated for so many years that speakers do not realize that the remark as well as the country is getting old and that the boundaries of the new are further afield. Perhaps one of the most obvious symptoms of the change is the publication of works of travel by citizens of that country dealing with other lands, the number of which has become large in recent years. This obsession of the wilderness, of the desire for the remote regions, seized upon our author and led him into the northern mountain country at the sources of the Peace River. He has the real love of such a world When he came there, "It seemed as if this were my kingdom and that after long years of absence I was once more entering it." An unconscious echo of Coleridge: "It is their appointed rest and their native country and their own natural home, which they enter unannounced as lords that are certainly expected, and yet there is a silent joy at their arrival." He rather happily hits off the intimate life of the hills as distinguished from that understood by the tripper. "There is as much difference between viewing mountains from a car window or the top of a coach and travelling among them on foot or with a pack train as there is between seeing a beautiful woman on the other side of the street and being married to her."

He had heard, as many have heard the stories of mighty snow mountains in the north "higher than Mt. Robson," but no one has found them; the explanation being that the snow level is lower there than round the Canadian Pacific Railway, the country which is always used as a base of comparison, and the general elevation of the mountains is much less, hence lending the appearance of great height to any mountains which stand out above their fellows.

Travel was made by canoe, a dream of luxury to one who has

*Chas. Scribner's Sons, New York, 1917, $4.00.

been compelled to adjust himself to the moods of the restive pack horse—at any rate down stream. Water was taken on the Fraser at Hansard not very far from Prince George, on the Grand Trunk Railway. Thence by Giscome Portage to Summit Lake, from thence the Arctic waters flow. Apparently the portage was crossed without a rain storm. Popular opinion is that every one gets soaked in crossing it; it is a country of quickly changing weather—mostly samples. The Crooked River which flows thence is popularly known as the Waggon Road, as along many of the shallows there lay on either side a line of boulders that had evidently been rolled out of the way. The road mender is said to have been "Twelve-Foot Davis," who took his name from the size of his mining claim, not his stature. His characteristic epitaph reads: "He was every man's friend and never locked his cabin door."

The many eagles all through this country create havoc among the lambs of the mountain sheep, which probably accounts for the rarity of their appearance. Fish were plentiful in places, trolling being the most successful mode of capture. The Crooked River ends in McLeod's Lake, on whose western shore is the Hudson's Bay Company's Fort McLeod, originally established in 1805 by the Northwest Company. It is the oldest settlement west of the Rocky Mountains north of California. At the foot of the lake a number of pre-emptions have been located by men who have hopes that the Pacific Great Eastern Railway may pass that way on its passage to the Peace River Country. The only habitation, except a few trappers' cabins between Ft. McLeod and Finlay Forks, is the house of Ivor Guest, who, himself of U. E. Loyalist stock, inherits names well known for generations in the west of England. He possessed a dug out some forty feet in length, which will probably surprise Eastern readers. From McLeod's Lake the river to its junction with the Parsnip is called the Pack. Below the mouth of the Pack on the opposite side of the Parsnip rises the striking cut bank which should have been the landmark of Warburton Pike on that disastrous journey of which he tells in "Barren Ground of Northern Canada" in vivid language. He was misled by a cut bank opposite the mouth of the Nation River, and followed that stream until he realized he was nowhere near McLeod, and was almost without food. Returning through the winter snows the party at last reached Hudson's Hope within a short journey of death, as Milton and Cheadle reached Fort Kamloops thirty years before.

Very little is known of the immense mountain mass lying between Pine Pass and Peace River. It is a hard country to travel. Somers-Somerset's expedition which went through Pine Pass from Dunvegan in 1893 was reduced to killing pack horses for food before they reached Ft. McLeod. Here seems to lie the borderland between the real bighorn (ovis canadensis) and the black, Stone's sheep (ovis stonei). Biologists are yet ignorant if this is a debatable land, biologically as well as geographically, and if the two species intergrade.

At Finlay Forks the Parsnip joins the Finlay, pouring down from the north and their mingled waters form the Peace. Even at a low stage of water the Finlay is three hundred yards wide at the mouth and the "Forks" would seem a fine natural townsite. Along the banks stretches a level plain thickly timbered and possessing a rich soil; in the distance are the mountains and a mile down stream are the Finlay Rapids. For a few miles up stream the choicest land

has been pre-empted, but many of the pre-emptors have gone to the war. "A finer thing than this rallying from the ends of the earth the world has never seen."

The "joy ride" was now over. Up the Finlay every mile had to be won by hard work. Often magnificent views of the mountains were seen on either side of the stream. On the left is the gneissic ridge which begins at the Black Canyon of the Omineca and runs northward along the Finlay; on the right rise the main Rockies, chain after chain, and through passes splendid glimpses were caught of the rugged white peaks which sent a challenge to come and climb.

Shortly before Fort Grahame was reached a brown bear was killed. Bears of all kinds seem fairly plentiful in the country. The Indians are strictly in the hunting stage; they raise no crops of any kind and subsist entirely on meat. Freight into the Fort is ten cents a pound, and "White man's grub" is an expensive luxury. Moose is the staff of life with rabbit standing second. Stone's sheep and mountain goat are also found in the neighbouring mountains, but the goat are fond of wild garlic which gives the meat an unpleasant taste.

At Deserter's Canyon above Ft. Grahame the river contracts to the width of about a hundred feet and the water rushes through with racing speed. The canyon walls are hard conglomerate and sandstone through which the stream has cut a narrow gorge. Here is a complete barrier to navigation up stream, but a good Indian path makes the portage not too severe. A superb, nameless peak, culminating in a pinnacle bearing patches of snow, towers above the canyon on the eastern side.

Above the canyon comes in the Ackié, which, according to Indian tradition, flows through a wonderful country. In it there are spots where the water is boiling hot and at night the narrator once saw in the face of a mountain opposite a great bright eye, fully a foot across which stared down at him and made him afraid. Could this be a "hole in the wall," like the one above Healy Creek, with the moon shining through? It is possible.

After some days' journeying the mouth of the Quadacha or Whitewater was reached and the unknown and most interesting portion of the expedition began. The river is milky and the question as to the origin of the colour was in dispute; was it from glacial silt or from white cut banks, as trappers suggested? The canoe and some food were cached near the mouth of the river and the travellers set out to find the reason.

This section is the most vivid and interesting in the book. The country was a difficult one and the best way to get an idea of the surroundings was to get on a high ridge. This was achieved, with the too familiar result—it was the wrong ridge. It was determined to go on, however, until the forks of the stream of which the Indians had spoken were reached. The North Fork showed clear water, while the East Fork was quite white. Between the two streams, which are nearly equal in volume, rose a high mountain ridge. The East being white, the explorer thought should hold the name of Quadacha, while to the North Fork he gave the name of Warneford after the heroic aviator who won the Victoria Cross. It was impossible under the conditions of the trip to go further up stream, but a barren mountain on the homeward way would evidently afford a fine view and this was climbed. The view was well worth the climb, commanding the country. To eastward and northeastward the travellers overlooked the whole of the unexplored region of the

Rockies from Laurier Pass on the south to the Liard River on the north. "There was no peak taller than Mt. Robson. Much the finest lay far to the northeast with three great summits, two of them peaks, the third and tallest an immense block. . . . Down the south slope of it, filling a great valley miles wide and miles long there flowed a perfectly immense glistening glacier. . . I venture to predict that when the glacier has been more closely examined it will be found to be one of the biggest of the whole Rocky Mountain system."

On the North Fork of Warneford River there was at least one, perhaps two or three, much smaller glaciers. The ranges run parallel to the Finlay. The author named the mountain beside the Glacier Mt. Lloyd George.

Of the hunting along the upper reaches of the Finlay, the shortage of food, the running of the Long Canyon to Fort Grahame on a raft, the long journey down the mighty Peace to rail head, we have no space to speak. The book is full of interest and the style is straightforward and unpretentious.

The publishers have printed and illustrated the book well, but a house of the standing of Scribner's should provide an index to a book of this character.

An interesting appendix is supplied by a transcript of Finlay's diary on the first exploration of the stream in 1824.

S. H. MITCHELL.

Flora of the Rocky Mountains and Adjacent Plains

Containing descriptions of the native and naturalized flowering plants and fernworts, growing in Colorado, Utah, Wyoming, Idaho, Montana, Saskatchewan, Alberta and the neighboring parts of Nebraska, South Dakota, North Dakota and British Columbia.

By P. A. Rydberg, Curator, New York Botanical Garden*

When first science sends her explorers into a new world they are more mindful of their native parishes than of the future people of a young territory. Their reports are sent home and often buried in the periodicals of a more or less obscure society or government blue book. Hence, when the time comes for full information, a book must be compiled by one writing with authority and possessed with profound patience for research work. Dr. Rydberg has adventured in the field and his work of labour and of love will be invaluable to all who take interest in the botany of the mountains.

Naturally, the book is written primarily for readers in the United States, but flowers do not recognize the 49th parallel; their zones are of climate not of geography. Probably many of the species only so far recorded south of the border will be found to grow also in Canada and be duly noted by our own botanists.

It is to be regretted that Dr. Rydberg has not followed in his system of nomenclature the "Vienna Rules" which most botanists in this country and in Europe agree to be truly scientific and adapted for universal use, thus standardizing and therefore lessening the labour of the worker. He prefers the American system and also follows the national habit of minute subdivision of genera, which annoys many biologists of wide experience as tending to triviality.

These are but spots upon the sun. The book is of capital importance and should be in the hands of all serious botanists.

EDITOR.

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*Published by the Author, price $4.05 post free.

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Note.—The Editor will be glad to receive any additions to the above list.

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MAPS OF CANADIAN MOUNTAIN REGIONS

The following maps may be obtained from the Topographical Surveys Branch of the Department of Interior, Ottawa, Canada:—

Selkirk Range.—Scale 1/60,000, countour interval 100 feet. (Report and maps in 2 vols.) Price $1.00.

Crowsnest Forest and Waterton Lakes Park.—Scale 1.014 inches to mile. Contour interval 100 feet. By M. P. Bridgland, 1913-14. (In 5 sheets.) Price 50c.

Banff and Vicinity.—Scale 1 mile to 1 inch. Contour interval 100 feet. Free.

Mt. Robson and Mountains of the Continental Divide, north of Yellowhead Pass.—Scale 1.9 miles to 1 inch approx. Free.

Portion of the Foothills Region (S.W. of Calgary).—Scale 1 mile to 1 inch approx. By A. O. Wheeler, F.R.G.S., 1895-96. Price 50c.

Central Part of Jasper Park, Alberta.—By M. P. Bridgland, 1915. Scale 1/62,500. Contour interval 100 feet. In 6 sheets. Price 60c. (This map may be obtained dissected and mounted in a case. The price, which will not be less than $3.00, has not yet ben set.)

Central Part of Jasper Park, Alberta.—By M. P. Bridgland, 1915. Scale 1/125,000. Contour interval 100 feet. Free.

Waterton Lakes Park, Alberta.—By M. P. Bridgland and A. O. Wheeler. Scale 1/100,000. Contour interval 100 feet. Free.

The last two maps may be obtained, dissected and mounted. The price, which will not be less than 75c. each, has not yet been set.

The following may be obtained from the Chief Geographer, Ottawa:—

Rocky and Selkirk Mountains adjacent to the C.P. Railway. Scale 2 miles to 1 inch (in 2 sheets). Price 20c.

Rocky Mountains between lat. 51° and 53° 10′. Scale 4 miles to 1 inch (in 2 sheets). Price 20c.

The following may be obtained from the Secretary, Geological Survey, Department of Mines, Ottawa. A nominal price of 10c. a copy is charged.

No.

942 Peel and Wind Rivers, Yukon Territory. Scale 1/506,880.

1099 Pelly, Ross and Gravel Rivers, Yukon Territory. Scale 1/506,880.

40A Bighorn Coal Basin, Alberta. Topographical. Scale 1/125,000.

9A Bighorn Coal Basin, Alberta. Geological. Scale 1/125,000.

930-2-4-6 Cascade Coal Basin, Alberta. Topographical. Scale 1/63,360.

929-31-33-35 Cascade Coal Basin, Alberta. Geological. Scale 1/63,360.

142A Field, Kootenay District, B.C. Geological and Topographical. Scale 1/126,720.
19A Lardeau, W. Kootenay District, B.C. Topographical. Scale 1/253,440.
791 W. Kootenay Sheet, B.C. Topographical. Scale 1/253,440.
792 W. Kootenay Sheet, B.C. Geological and Topographical. Scale 1/253,440.
165A Windermere, Kootenay District, B.C. Topographical. Scale 1/125,000.
175A Ymir, Kootenay District, B.C. Geological and Topographical. Scale 1/63,360.
1667 Slocan Mining Area, Kootenay District, B.C. Geological. Scale 1/63,360.
1068 Sheep Creek Mining Camp, Kootenay District, B.C. Geological. Scale 1/63,360.
107A Blairmore, Alberta. Geological. Scale 1/126,720.
174A Blairmore, Alberta. Topographical. Scale 1/63,360.
767 Crowsnest Coal Fields, E. Kootenay District, B.C. Geological and Topographical. Scale 1/126,720.
57A Frank, Alberta, showing landslide 1903. Topographical. Scale 1/9,600.
99A S. portion of Cranbrook map area, E. Kootenay, B.C. Geological and topographical. Scale 1/253,440.
147A Cranbrook Map Area, E. Kootenay, B.C. Geological and topographical. Scale 1/253,440.
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834 Boundary Creek Mining District, B.C. Topographical. Scale 1/63,360.
828 Boundary Creek Mining District, B.C. Geological and topographical. Scale 1/63,360.
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Photos, H. E. Bulyea

SWISS GUIDE NAILING CLIMBING BOOTS

CLIMBING PARTY ASCENDING ODARAY GLACIER

UPPER CAMP IN O'HARA MEADOWS

Cataract Valley, 1917

OFFICIAL SECTION

REPORT OF CATARACT VALLEY CAMP

The twelfth annual camp was held in the Valley of Cataract Brook on the same site as that of the Camp of 1913, from the 17th to 31st of July. A subsidiary camp was placed in the meadow near Lake O'Hara where was held the great camp of 1909. Ninety-one in all were placed under canvas; an excellent attendance considering how heavily the war has drawn on the membership of the Club.

There were present members of the English, Swiss and American Alpine Clubs, and of the Royal Geographical Society.

Attendance at the Camp was drawn from the following places:

CANADA

British Columbia: Cameron Lake, Field, Kelowna, Sidney, Vancouver, Victoria and Wilmer.
Alberta: Banff, Calgary, Carmangay, Didsbury, Edmonton, Irricana, Macleod, Soda Lake and Vegreville.
Saskatchewan: Regina, Saskatoon.
Manitoba: Virden, Winnipeg.
Ontario: Ottawa.
Quebec: Montreal.
Nova Scotia: Windsor.

UNITED STATES

District of Columbia: Washington.
North Dakota: Grand Forks.
Massachusetts: Boston.
New Jersey: Summit.
New York: New York, Brooklyn.

SWITZERLAND

Chur: Interlaken.

THE ANNUAL MEETING

The Annual Meeting was held at the Camp Fire on the morning of July 25th, the Director taking the chair.

The President's address was read, regretting his absence caused by heavy pressure of business and suggesting that former precedents should be followed and a resolution of sympathy and appreciation should be sent to members on war service.

Communications were read from Col. W. W. Foster, Vice-President, expressing the gratification of himself and other members at the front that "the Club continued to fulfil its mission and maintain

the great traditions associated with it"; also from Capt. G. S. Provis, Major H. W. A. Foster, Dr. J. Norman Collie and Dr. W. E. Stone, regretting absence and hoping all things from the continued activity of the Club.

The Director's report was then submitted. He summarized the history of the Club during the past year and emphasized the duty of its members at home to carry out the often expressed wish of the members at the front so that the Club would be in unimpaired vigour when all were united at the close of the war. He suggested a resolution of appreciation of the entry of the United States into the war for freedom, and made clear the work the Club was doing in the interests of the mountain regions of Canada, both among the people of Canada and other nations.

The Hon. Treasurer wrote saying that the finances of the Club were in a healthy condition and called attention to the fact that Club dues of all kinds were kept at an exceedingly low figure, and that only by prompt payment from members could the Club pay its necessary expenses.

The Secretary-Treasurer stated that the membership was not increasing, but new members were coming to replace those who had dropped out, and urged the younger members to carry on the Club's work with the Club's traditional enthusiasm.

Resolutions were passed, of sympathy and appreciation to all the members on war service, and of gratification at the entry of the United States into the war, to be sent to the Mountaineering Clubs of the United States.

The usual votes of thanks were passed to all who had helped to make the work of the Club a success.

Dr. Hickson enquired as to the possibility of erecting huts in the mountains for the convenience of members wishing to make independent expeditions, without the heavy expense of a camp and pack train. The Director stated that the Club executive had long had this matter under consideration, the chief difficulty was that of finance.

Dr. Hickson also suggested a Club memorial to members who had been at the front. This, the Director said, had also been considered and one member had already made a promise of substantial assistance. No definite action could be yet taken and the Executive was open to suggestions.

The Chairman, in closing the meeting, said that all members should consider that they were not merely casual supporters of a sporting institution. "Each is an actual owner of the Alpine Club. All property is owned by members themselves—the Camps, the Club House. Think what it means! Some day you will be proud of it."

The meeting then adjourned.

REPORT ON MOUNTAINEERING AND EXPEDITIONS

The Camp was surrounded by attractive climbs and fascinating expeditions. For the greater part of the time the weather was perfect. A snowstorm gave an opportunity for rest, and the weather turned to summer again.

Telephoto, C. G. Wates

ALPINE CLUB HOUSE
On Sulphur Mt. at Banff

The following mountains were climbed: Hungabee, Huber, Odaray, Cathedral, a peak of Victoria Ridge, south of Pope's Peak, and Schaffer. Vanguard Peak of Mt. Cathedral proved a most excellent rock climb, by no means a task for a tyro.

The magnificent two-day trip was made by Abbot Pass and Mitre Pass to Paradise Valley, and thence by Wastach, Wenkchemna and Opabin Passes back to camp; a journey which reveals the heart of the mountains without too exhausting labour.

Trips were also made to Lake Oesa, Lake McArthur, McArthur Creek for fish, to Field, to Sherbrooke Lake and many another coign of vantage. The snowstorm prevented the ascent of Victoria by the Huber Ridge, a climb anticipated with pleasure by the more skilled climbers.

Mr. and Mrs. MacCarthy with Conrad Kain made the ascent of Hungabee, the first climb of this peak by a lady.

The professional guides were Christian Jorimann and Christian Häsler.

Twenty-one passed the test for active membership. The list follows:

Peak of Victoria Ridge, south of Pope's Peak, July 20th
Mrs. E. B. Edwards

Mt. Huber, July 22nd
Miss M. E. Pierce
Miss L. E. Rupp

Mt. Odaray, July 24th
Miss R. Waterman
F. N. Waterman
F. M. Black
H. E. Bulyea
J. W. Keith
D. M. Sinclair

Mt. Cathedral, July 26th
Miss H. M. Greenway
Miss N. B. Hendrie
Mrs. M. C. Johnston
Miss B. A. Mitchell
Miss E. McDonald
Miss A. Whittaker
J. R. Brown
W. Johnstone
N. D. Keith
L. H. Lindsay
A. S. Sibbald
W. B. Whittaker

THE CLUB LIBRARY

The subjoined annotated list gives an account of the books presented to the Club this year.

Lieut.-Colonel Mitchell, our Eastern Vice-President, in the midst of his vital work for the allied armies, has found time to send us attractive and informative books published by the Italian Alpine Club. We trust he will interest the Club in the Canadian Rockies and induce some of its members to visit us. A camp amidst our finest peaks for mountaineers of the allied nations should be a delight.

Mr. LeRoy Jeffers, who is secretary of the Bureau of Associated Mountaineering Clubs of North America, as well as one of our own members, has presented a large number of books, some being of great interest.

Mrs. E. B. Edwards has most kindly given the book cases asked for in the last Journal, to commemorate her graduating climb. They were much needed and are still more appreciated.

The most striking addition to the library is an excellent portrait of Mr. A. O. Wheeler, the Director of the Club. It is the gift of Mr. Harry Pollard, of Calgary, who enlarged it from a negative taken by himself and presented the finished picture to the Club. It is a speaking likeness and occupies the place of honour over the fireplace.

The late Captain E. N. White, whose portrait appears on a previous page, shortly before his death in action, collected and packed some war souvenirs for the Club House. They include the nose and part of the body of a German shell, a German leather ammunition case and a small tin box painted to represent an oak chest such as is used to store household linen in Germany. They were taken at La Boutellerie in 1914. His father kindly forwarded the parcel after the death of his son.

Mr. Hornibrook sent a copy of the 1917 List of Members picked up by his brother in a German dug-out at Vimy Ridge, still showing the trench mud.

Mr. Harkness have given an album of views in various districts of the main range. Such albums form a never failing delight to members at the Club House.

Sundry gifts of necessary furnishings for the Club House were presented by Mrs. A. O. Wheeler.

A handsome lounge seat and pillows were the gift of Miss E. Savatard.

The usual exchanges have been received. Owing to lack of new climbing records, the European magazines have "dug up" many accounts of early climbs of great interest and historic value. The Swiss Alpine Club is still opposed to lady members.

The list of additions follows:

The Bird Study Book. By T. G. Pearson. Pub. Doubleday, Page & Co., New York. Donor LeRoy Jeffers. Reviewed on a previous page.

Blazing the Trail through the Rockies. By Noel Robinson. Pub. News-Advertiser, Vancouver. Out of print. Donor H. O. Frind. Reviewed on a previous page.

The Book of Camping. By A. H. Verrill. Pub. A. A. Knopf, New York. Donor LeRoy Jeffers.

An elementary book giving such obvious advice as to avoid camping with over fastidious people, or those who drink to excess. There are many hints in it of a certain value.

Camping Out. By W. H. Miller. Pub. G. H. Doran Co., New York. Donor LeRoy Jeffers.

This book, by the editor of "Field and Stream," gives many hints. It is pleasantly written, being a compromise between the magazine article and the "pemmican" of the handbook.

Camping and Woodcraft, vol. II. By H. Kephart. Pub. Outing Co., New York. Donor LeRoy Jeffers.

A book containing much valuable information, recognizing that a book can only be a stepping stone for a beginner, not a foundation. It gives a clear idea of general principles and shows how *not* to do a thing, and why. An invaluable work might be produced if the many recent volumes on camping were boiled down into one by an expert with a gift of lucid writing.

Canada the Spellbinder. By L. Whiting. Pub. J. M. Dent & Sons, London and Toronto. Donor H. R. Charlton.

A primer of the country traversed by the Grand Trunk system for American readers. It contains a precis of Canadian history and an appreciation of her poets, as well as the usual chapters describing the country, which are not too rhetorical. It is well illustrated and has a good map and index.

The Cruise of the Corwen. By John Muir. Pub. Houghton Mifflin Co., Boston and New York. Donor LeRoy Jeffers. Reviewed on a previous page.

Green Trails and Upland Pastures. By W. P. Eaton. Pub. Doubleday, Page & Co., New York. Donor LeRoy Jeffers.

A series of essays, mostly reprinted from magazines, being appreciations of different aspects of the country. They give the impression of being written to order. Rare among the citizens of the United States is the intense longing to return to the country as soon as the city sets them free, to have a garden, to make things grow, which bespeaks the real countryman. The book is too sentimental to be sympathetic.

The Life of Sir Clements Markham. By Sir Albert H. Markham. Pub. John Murray, London. Donor Mrs. H. J. Parker. Reviewed on a previous page.

The Mountains of California. By John Muir. Pub. Century Co., New York. Donor Miss Lydia B. Edwards. Reviewed on a previous page.

The National Parks of U.S.A. First Annual Report. Pub. Government Printing Office, Washington.

On the Headwaters of Peace River. By P. L. Haworth. Pub. Chas. Scribner's Sons, New York. Donor LeRoy Jeffers. Reviewed on a previous page.

Travels in Alaska. By John Muir. Pub. Houghton Mifflin Co., Boston and New York. Donor Miss Rhoda W. Edwards. Reviewed in Canadian Alpine Journal, vol. VII.

Two Summers in the Ice Wilds of Eastern Karakoram. By Fanny Bullock Workman and William Hunter Workman. Pub. T. Fisher Unwin, Ltd., London. Donor LeRoy Jeffers. Reviewed on a previous page.

Voyages on the Yukon and its Tributaries. By Hudson Stuck. Pub. Chas. Scribner's Sons, New York. Donor LeRoy Jeffers. Reviewed on a previous page.

Altitudes in Canada. By James White. Pub. Mortimer Co., Ottawa. Donor James White.

Dictionary of Altitudes in Canada. By James White. Pub. Mortimer Co., Ottawa. Donor James White.

Georgian Bay Place Names. By James White. Pub. Ontario Historical Society, Toronto. Donor James White.

Quebec, Thousand Islands and Northern Canada Place Names. By James White. Pub. Geographic Board of Canada, Ottawa. Donor James White.

Southern Rockies Place Names. By James White. Pub. Royal Society of Canada, Ottawa. Donor the Author.

Edward Ermatinger's York Factory Express Journal: Being a record of journeys made between Ft. Vancouver and Hudson Bay in the years 1827-1828. Introduction by C. O. Ermatinger and Notes by C. O. Ermatinger and James White. Pub. Royal Society of Canada. Donor James White.

Handbook of Indians of Canada. Tenth Report of Geographic Board of Canada. Edited by F. W. Hodge and James White. Pub. King's Printer, Ottawa. Donor James White.

[The above seven volumes, several of which are now unobtainable, are, as their titles tell, of the utmost value to students of Canadian history.]

Sunset Canada, British Columbia and Beyond. By Archie Bell. Pub. The Page Co., Boston. Donor LeRoy Jeffers.

A beautifully printed and illustrated book, suitable for the drawing room tables of those who explore from hotel verandahs. The English is careless and the information often inaccurate. The origin of the name "Kicking Horse Pass" is well and definitely known. It was so called from the accident to Dr., afterwards Sir, James Hector in August, 1858, near the present Leanchoil station. Sir James was never "first president of the Canadian Pacific Railway." The picture facing p. 288 does not represent "Climbing on Mt. Lefroy," but two well known members of the A.C.C. on the rocks above Robson Glacier. Mt. Lynx appears in the background. The account quoted of the accident on Mt. Lefroy is not by "a local guide" but by Professor Fay, and appears in Vol. VIII. of "Appalachia." The Columbia does not rise "far to the north" of the Arrow Lakes, nor is the motto of British Columbia "*Splendour sine occasu.*"

Sign Talk. By Ernest Thompson Seton. Pub. Doubleday, Page & Co., Boston and New York. Donor LeRoy Jeffers.

In the history of humanity gesture comes before speech, and among primitive and emotional peoples the sign language is much used. Some signs are instinctive, others purely arbitrary. This book is an attempt to codify 1,600 signs used by the Plain Indians, together with some of those used by the deaf and others in Europe and America.

A Guide to the National Parks of America. Edit. by E. F. Allen. Pub. R. McBride & Co., New York, 1918. Donor LeRoy Jeffers.

A compilation "to supply all necessary information as to what each of the parks offers to the tourist and the various ways of seeing these features to the best advantage." This booklet includes the more important of the Canadian parks, but is somewhat out of date. One of the Banff "Guides" recommended died of war wounds in May, 1917, and three of the hotels mentioned are closed. Mounts Rundle and Cascade rise over 5,000 feet not "900 feet above the winding Bow River." The livery rates have been raised.

Guida dei Monti d'Italia: Regione dell 'Ortler; Alpi Retiche Occidentali. Published by the Italian Alpine Club. Donor Lieut.-Col. C. H. Mitchell.

These two guide books to the regions of the Ortler, the Engadin, the Splugen, etc., are elaborately equipped with maps and illustrations. Besides the usual guide book information, references are given to books which deal with the places mentioned, such as the Alpine Journal, the Swiss Alpine Journal,

and also to the best maps. Mention is also made of the parties, including the guides, which made the first ascents. Colonel Mitchell has also sent some books of views and some very handy pocket maps.

Finding the Worth While in the Southwest. By C. F. Saunders. Pub. R. McBride & Co., New York, 1918. Donor LeRoy Jeffers.

Another of the multitude of handbooks manifesting the different parts of the United States to the world. This deals with districts of Arizona, New Mexico and Southern California in a gossipy way, and contains a good deal of historical interest lacking in the usual tourist books.

Practical Bait Casting. By L. St. John. Pub. The Macmillan Co., New York. Donor LeRoy Jeffers.

Unfortunately this book was received too late to be reviewed adequately. It contains practical and lucid information principally concerning black bass fishing, and is written from a sportsmanlike point of view. There is no index.

In Good Company. By Coulson Kernahan. Pub. John Lane Co., London and New York. Donor L. C. Wilson.

A series of interesting personal studies of well-known men, the most interesting of which to mountaineers is the one on Edward Whymper. It is a vivid and sympathetic picture of the great climber in his later days.

Glacier National Park. By M. E. Hold and K. I. Bemis. Pub. G. H. Doran Co., New York. Donor LeRoy Jeffers.

Pleasantly written, discursive chapters on various aspects of this beautiful region.

Your National Parks. By Enos A. Mills. Pub. Houghton Mifflin Co., Boston and New York. Donor LeRoy Jeffers.

This book, dealing with the National Parks of the United States, and, on a smaller scale with those of Canada, contains information both historical, descriptive and statistical. It is for the public to decide whether it is more convenient to have the guide book details, which vary from year to year, published separately. The pemmican and the padding do not very well combine.

Flora delle Alpi Atlante. By O. Penzig. Pub. Ulrico Hoepli, Milan. Donor Lieut.-Col. C. H. Mitchell.

A popular botany of Italian mountain flowers beautifully illustrated with chromolithographs of 250 species.

PAMPHLETS

Shall the Name of Mt. Rainier be Changed? By C. Hart Merriam. Donor the Author.

Statement of C. T. Conover and V. J. Farrar in the Matter of the Proposal to Change the Name of Mt. Rainier. The Decision.

The U.S. Geographic Board held a public meeting on May 2nd, 1917, to hear arguments for and against the change of the name of Mt. Rainier, and a special meeting on May 11th, 1917, at which the evidence presented on May 2nd, together with other data were considered. The Geographic Board established the name Mt. Rainier.

The Woodpeckers of Colorado. By F. C. Lincoln. Publisher and donor The Colorado Mountain Club.

REST AT THE CHATEAU LAKE LOUISE

When you have done with climbing, and wish perfect rest amidst the loveliest scenery in the world, where you can write the story of your climbs—come to the Chateau at Lake Louise, where the windows frame million dollar pictures. A fine cuisine and a pleasant social life.

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For rates apply the Manager
Chateau Lake Louise
Alta.

Reasonable Rates

Photo, H. E. Bulyea

MT. ROBSON—13,068 Feet
Looking South

V

CANADIAN ALPINE JOURNAL

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Copies of the current and past issues of the Canadian Alpine Journal can be obtained from the Secretary-Treasurer, S. H. Mitchell, Sidney, Vancouver Island, B.C., from whom also the prices of the back numbers can be obtained.

All applications for copies must be accompanied by money order or postal note. Cheques not accepted.

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CANADIAN ALPINE JOURNAL

PUBLISHED BY
VOL. X. THE ALPINE CLUB OF CANADA

MEMBERS ON IMPERIAL AND AMERICAN WAR SERVICE

L. S. Amery ..... 14th Royal Warwickshires
(Captain, General Staff)
W. A. Alldritt ..... 90th Regiment
(Sergeant, prisoner, escaped)
W. H. K. Anderson ..... 13th Canadian Field Ambulance
(Lieut.-Col., D.S.O., Croix de Guerre)
Mrs. W. H. K. Anderson ..... Nurse
R. G. Annand ..... 50th Battalion
(Sergeant, wounded)
I. N. Austin ..... 104th Field Ambulance

W. R. Ball, C.F. ..... 49th Battalion
(Captain, wounded)
F. C. Bell ..... Asst. Director of Medical Service
(Lieut.-Col., C.M.G., wounded, twice mentioned in despatches)
H. Bennett ..... Divisional Signallers
(Lieutenant)
P. R. Brecken ..... Y.M.C.A.
M. Bright ..... Royal Engineers
(Lieutenant, wounded)
W. E. L. Broad ..... 137th Battalion
(Lieutenant, killed in action)
E. W. Bickle ..... 48th Highlanders
(Captain, wounded)
F. C. Brown ..... 1st Canadian Reserve Battalion
(Lieutenant, wounded)
W. C. Bruce ..... Canadian Engineers
E. M. Burwash .....
(Captain, C.F.)

G. Cameron ..... R.A.F.
(Lieutenant)
K. C. Campbell ..... 43rd Battalion
(Major)
R. J. Casement .....
(Lieutenant, D.C.M.) Canadian Engineers

J. A. Clark
(Brigadier-General, C.M.G., D.S.O. and 2 bars)
R. P. Clark
(Brigadier-General, C.M.G., D.S.O., M.C., wounded)
C. G. Chinneck — 13th Mounted Rifles
(Sergeant)
J. H. Colville — R.A.F.
(Captain, wounded)
J. H. Cuntz — Signal Corps, U.S.A.
(Captain, wounded)

G. Darling — 9th Battalion Tank Corps
(Lieutenant)
W. R. Dyer — Alberta Regiment

A Eastham
J. E. C. Eaton — Artists Rifles
(Captain)

W. F. O'N. Fisher
(Captain, C.F.)
C. E. Fortin — Lord Strathcona Horse
(Major, M.O.)
H. W. A. Foster — 20th Battalion
(Major, D.S.O., M.C. and bar, 3 times wounded)
W. W. Foster — 52nd Battalion
(Lieut.-Col., D.S.O. and 2 bars, Belgian Croix de Guerre, French Croix de Guerre (gold star), 1914-15 star, wounded, 5 times mentioned in despatches, A.D.C. Governor-General)
T. Fitzsimon — R.A.F.

A. Gillies Wilken — C.M.R.
(Captain, C.F., prisoner exchanged)
A. M. Gordon — 4th Canadian Division
(Major, C.F., D.S.O., M.C.)
C. W. Gray — Headquarters Staff
(wounded)
W. F. Guild — 52nd Canadian Infantry
(Major, died of wounds, mentioned in despatches)
J. A. Gunn — No. 1 Canadian General Hospital
(Lieut.-Col., M.C.)
J. N. Gunn — 8th Canadian Field Ambulance
(Lieut.-Col., D.S.O.)

G. L. Haggen — Oxford and Bucks L.I. Pioneer
(Captain)
H. S. Hall, Jr. — Infantry R.C., U.S.A.
(Lieutenant)

LIEUT. T. J. TAYLOR, M.C.
Trench Mortar Battery
Killed in Action

Mrs. J. W. Henshaw
(Hon. Captain, French Croix de Guerre (gold star), French Ruban Blessés de Guerre, 2 bars, twice mentioned in despatches)

J. A. Hesketh — 11th Battalion Canadian Railway Troops
(Lieut.-Col., C.M.G., D.S.O., mentioned in despatches)

G. E. Howard — Artists Rifles
(Quartermaster-Sergeant)

P. M. Humme — Canadian Machine Gun Corps
(Lieutenant, Reconnaissance Officer)

J. R. N. Irven — 3rd Battalion Rifle Brigade
(Captain and Adjutant, wounded)

H. M. Johnson — General Staff, U.S.A.
(Lieutenant)

A. C. C. Johnston — 5th Battalion
(Captain, M.O., M.C.)

S. L. Jones — P.P.C.L.I.
(Major, prisoner, died of wounds)

Mrs. S. L. Jones — Nurse, French Red Cross
(Lieutenant)

Miss H. M. Kilmer — Nurse

W. S. Ladd — Med. Reserve Corps, U.S.A.

C. G. Lathrop — Air Service, U.S.A.
(Captain)

F. V. Longstaff — 5th Battalion East Surrey Regt.
(Major)

T. G. Longstaff — 7th Hampshire Regiment
(Captain)

A. J. Milborne — 3rd Field Ambulance
(Captain, mentioned in despatches)

C. H. Mitchell
(Brigadier-General, C.B., C.M.G., D.S.O., Order of Leopold, Crown of Italy, Legion of Honour, Croix de Guerre Belgium, Croce di Guerra Italy, 7 times mentioned in despatches)

Miss J. Monk — Nurse
(disabled)

A. B. Morkill — 7th Battalion
(Captain, M.C., wounded)

A. H. MacCarthy — U.S.N., R.F.
(Lieutenant-Commander)

R. C. Morrison
(Sergeant, killed in action)
K. D. McClelland ..... O.R.C., U.S.A.
(Lieutenant)
J. C. McHutcheon ..... Sherwood Foresters
(Lieutenant, died of wounds)
W. C. McNaught ..... 84th Battalion
(Captain)
J. G. McDougal ..... 202nd Battalion
(Lieutenant)
Miss E. McPhedran ..... Nurse
E. S. MacGregor ..... 187th Battalion

G. L. Oliphant ..... C.F.A.
(Corporal)
Sir James Outram
(Major)
J. C. Oxborough ..... 12th C.M.R.
(Corporal, killed in action)
W. Oxborough ..... 12th C.M.R.
(wounded)

R. E. Patterson ..... Fort Garry Horse
(Lieutenant)
W. F. M. Pearce ..... 1st Montreal Regiment
(Major, M.C., mentioned in despatches, wounded)
Donald Phillips ..... 78th Battery
Mrs. E. M. Phillips ..... V.A.D.
E. F. Pilkington ..... Manchester Regiment
(Major)
J. M. Poucher ..... 51st Battalion
Rev. C. S. Provis ..... Attached 15th Machine Gun Co.
(Captain, C.F.)

R. I. Raiman ..... Y.M.C.A.
C. B. Reilly ..... 69th Battalion
(Captain, wounded)
C. B. Reynolds ..... 9th C.M.R.
(wounded)
E. G. Ritchie
A. E. Robertson ..... 5th G.A.
(Captain)
F. A. Robertson ..... 47th Battalion
(Major, D.S.O., wounded)
J. W. Ross
(Captain, M.O.)

C. F. Savage ..... Northumberland Fusiliers
(Lieutenant, wounded)
Miss J. T. Scott ..... Nurse
G. M. Smith ..... P.P.C.L.I.
(Captain, M.C.)
R. H. Smith ..... 4th Field Ambulance
(died of wounds)

LIEUT. J. C. TYLER, CROIX DE GUERRE
Aviation Service, U.S.A.
Killed in Action

G. R. Street ..... 3rd Field Ambulance
(Corporal)

E. L. T. Taylor ..... R.A.
(Lieutenant)
T. J. Taylor ..... Trench Mortar Battery
(Lieutenant, M.C., killed in action)
J. E. Tilleard .....
A. Tomlinson ..... 230th Canadian Forestry Battalion
F. Trant ..... 14th Battalion
(wounded)
A. Tyler ..... U.S. Naval Aviation
J. Tyler ..... U.S. Aviation Service
(Lieutenant, Croix de Guerre, killed in action)

S. J. Unwin ..... Canadian Artillery
(Sergeant, died of wounds)

J. H. Vincent ..... 201st Field Artillery, U.S.A.
(Lieutenant)

Miss H. Walcott ..... Nurse
P. A. W. Wallace ..... Divisional Signallers
Rev. T. G. Wallace .....
(Major, Senior Chaplain)
Miss K. Walker ..... Nurse
H. Watts .....
(Captain)
A. W. Wakefield .....
(Captain, M.O.)
O. Q. Warren ..... C.M.R.
(Lieutenant)
A. F. Wedgwood ..... 5th Battalion North Staffordshire
(Captain, killed in action) Regiment
H. Westmorland ..... C.M.R.
(Captain)
E. O. Wheeler ..... King George's Own Sappers and
(Brevet-Major, R.E., M.C., Cross, Legion of Honour, mentioned four times in despatches) Miners
Rev. G. D. Whitaker .....
(Captain, C.F.)
E. N. White ..... 1st Battalion Middlesex Regiment
(Captain, killed in action)
K. H. White ..... M.T. Service
(Captain)
Rev. H. B. Winser .....
(Captain, C.F., wounded)
K. D. Woodworth ..... Yacht Patrol
(Lieutenant)

J. R. Young ..... H.B.M.G.C.
(Lieutenant)

MOUNTAINEERING SECTION

AROUND LAKE LOUISE IN 1918

By Val. A. Fynn

Arriving July 3rd, I went out alone the next day and strolled to the top of *St. Piran*, descending to Goat Pass between St. Piran and Niblock. The little lake* on the north side of this Pass is so beautifully located that I determined to pay it a visit. The snow slope leading into the little gorge opening on to the Bow Valley is quite steep but easily negotiated, and I was soon enjoying a beautiful and unusual view of Niblock from the shores of the little lake. It is possible to descend into Bow Valley by following the overflow of the lake more or less closely and thus reach the trail from Lake Louise to the Great Divide, but I preferred to traverse east, rising slowly along the western and northern slopes of St. Piran and the Little Beehive. The slopes are steep but the view is beautiful all the way. This little trip is well worth taking.

On July 6th, Rudolph Aemmer and I took Mr. Tom Corby, of Detroit, a young man about to enter the army, up *Mitre*. Leaving the Chateau at 8.05, we made the eastern Mitre Pass at 11.40. After an hour's rest, we reached the summit in one hour and thirty minutes, remaining half an hour. We were back on the Pass at 6 p.m. and at the hotel at 8.10. It was Mr. Corby's first real climb and he seemed to enjoy it greatly.

*Lake Minewakun.—Ed.

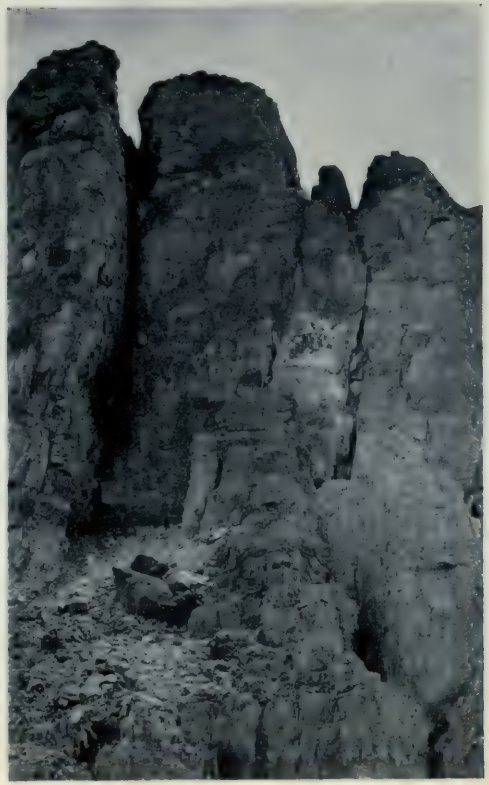
On July 8th, Rudolph and I left the Chateau at 4 a.m., reached the breakfast place at the foot of the upper Victoria Glacier at 7, and the col between the north peak of Victoria and Collier at 11. After an hour's rest, turned northeast and, following the arête, reached *Mt. Collier* in one hour. Continuing along the arête reached the lowest depression between Collier and the southern peak of Mt. Pope at 4.20. An easy descent along the southeastern face of the ridge brought us back to the upper Victoria Glacier and to the hotel at 6.15.

On July 12th, Mr. B. Gardom, Mr. J. C. L. Bennett, official photographer to the C.P.R., Rudolph Aemmer, Edward Feuz and myself started for O'Hara, groaning under an immense load of photographic paraphernalia carried by ponies as far as the glacier, and from there on by Rudolph and Edward. We had hardly reached Victoria Glacier when it started to rain heavily, but we trudged on bravely. By the time we reached Abbot Pass it was snowing. Here we deposited one of the large cameras, covering it with newspapers and stones, and proceeded on our way. Lake O'Hara was reached in due course and there we found more cameras and some food which had been packed in by trail. We made ourselves as comfortable as possible in the rather dilapidated and dirty "Wiwaxy Lodge." The next day proved ideal for photographic purposes, so we loaded a huge panoramic camera on one of the ponies and conveyed the same to McArthur Lake. Two loads were now made up and we took turns at carrying same to the top of Mt. Schäffer. Several eight and ten-foot panoramas were taken that day and turned out extremely well—the cloud effects are splendid.

On the 14th, which proved to be bright and clear, we walked back to the hotel over Abbot Pass, where the camera which had been left behind came into play with great success.

On July 16th, Rudolph and I left the hotel at 3.55 a.m., reached the breakfast place at the foot of the upper Victoria Glacier at 6.35, and continuing at 7.05 made the lowest point of the ridge between Collier and Mt. Pope at 9.35 and the southern peak of *Mt. Pope* at 10.20. Resting until 11.25 and following the arête we reached the main summit of Mt. Pope at 12.15. After an hour's rest and still following the ridge without serious difficulty, we came to the very steep and broken rock wall immediately above the steep ice slope leading down to the col at the head of the valley of the six glaciers. This wall is well seen from the C.P.R. line near the Great Divide and requires careful handling; the passage from rock to ice is not at all easy. At the spot where we struck the slope there was nothing but hard, steep ice, but a little on our right (south) and closer to the col we spied a little snow, so cut across in the hope of reducing the step cutting process. The snow proved very hard but serviceable, and we descended slowly, facing the slope. The col was reached in one hour and ten minutes, two hours and ten minutes after leaving the summit. Some time was spent in retrieving Rudolph's goggles, which had fallen out of his pocket when manoeuvering to reach the ice, and in consuming the rest of our provisions. At 4.15 we started down the couloir leading to the plain of six glaciers and reached the hotel at 7 p.m.

On July 17th, Mrs. Fynn, Rudolph and I drove to Moraine Lake Chalet, where we spent the night. Leaving at 4.30 a.m. on the 18th, we reached the col west of the main peak of *Mt. Pinnacle* at 9. The mosquitoes had pestered us all the way and we could not get rid of them now, they followed us all the way to the summit. Rudolph and I put on our climbing shoes, but Mrs. Fynn continued in her hobnailed boots. Leaving the col at 10.15 we reached the summit at 1.55, Mrs. Fynn



Photo, Val. A. Fynn
THE LAST CHIMNEY ON MT. PINNACLE

Photo, Val. A. Fynn
IN LAST CHIMNEY ON MT. PINNACLE

accomplishing the climb without the assistance of the rope except as a safety appliance in case of a slip. This is the first time Mt. Pinnacle has been climbed by a woman. Leaving the summit at 3 p.m. we reached the col at 5.50 and Moraine camp two hours later. Rudolph and I were very agreeably surprised to see how composedly Mrs. Fynn, though very tired, faced the descent of the two steep pitches.

Second Ascent and First Traverse of Glacier Peak

On July 21st, Rudolph and I walked to the Canadian Alpine Club Camp in Paradise Valley where I had the pleasure of meeting a number of old friends. Mr. Mitchell added to my indebtedness to him by allowing me to spend the night in his tent, while Rudolph bunked with Edward and Christian. We left Camp on the 22nd at 4.35 before anyone else was astir; following the trail, we soon trod the ice of Horseshoe Glacier and at 6.35 stood at the foor of an immense wall which encloses it on the west, just where some steep couloirs come down between Ringrose and Glacier Peak. The weather seemed somewhat uncertain, although bright enough at the time, so we set-to without loss of time. Perpendicularly below the two summits of Ringrose is a well defined cone of snow and ice fed by two large and one small and subsidiary couloir lying between the two others. The couloir on the left begins in the face of Ringrose under the northern peak of that mountain, widens out as it descends and is easily over-looked. The one on the right runs down from the col between Ringrose and Glacier Peak, slants in the direction of Mt. Wastach, is wide near the top, but narrows rapidly and is nothing but a deep groove just before it discharges on to the cone referred to. Between the two is a steep rib of rock divided into nearly equal parts by a small snow-filled gully, which also separates the upper part of the rib from the Ringrose wall. The bergschrund presented no

difficulties and the steep slope above soon led to the lower part of the rib of rock south of the couloir in which we were interested, *i.e.*, the one descending from the col. The rocks proved steep in places but afforded excellent holds and ample protection from stone, had any fallen. We followed this rib, crossed the gully separating it from its upper part and shortly afterwards crossed the main couloir to the Glacier Peak wall. We were obliged to use the rope to accomplish this crossing because of the deep and iced groove cut in the middle of the snow couloir. Reaching the rocks on the other side, we discarded the rope and ascended rapidly, keeping close to the couloir. Coming upon a cave in the rock, we stopped for breakfast from 9.20 to 10.10. We were now well above the rib of rock and within sight of the col. Leaving the cave, we soon turned away from the couloir perceiving that we could save time by striking the ridge somewhat north of the col. So far, we had been climbing in yellow and dark brown rock, but now we struck the black rock which crops out on nearly every summit in this district, and the climbing became more difficult. The ridge was reached at 10.45, and one hour later we stopped ten minutes below the summit of Glacier Peak for a lunch and a rest in a wind sheltered spot. The day was bitterly cold, the wind very high, and the lighting effect most extraordinary. A dense bank of clouds hung at about 11,000 feet and extended as far as the eye could see. The sun broke through here and there and the colouring of the visible valleys and peaks was quite unusual and extremely vivid. The whole scene reminded us of the Foehn effects we had so often seen in Switzerland and we felt sure that a snow storm was due. We could see a large party of Alpine Club members nearing the summit of Mt. Temple and wondered how cold they were. A little later we paid a visit to the Stoneman and thus accomplished the second ascent of Glacier Peak, the first from Paradise Valley.

At 12.30 we started cutting down the north ridge towards Lefroy, but found so much hard ice that we turned back, deeming it impossible to accomplish the task of cutting down the northwest face before a serious break in the weather. Passing over the top again we bore down toward the couloir on the west side between Ringrose and our peak which I had used on the occasion of the first ascent of Glacier Peak. When we looked down into this couloir we found it filled with shining ice and therefore attempted to get down the rocks north of it. We succeeded in reaching a point a little below that at which I had taken to the rocks some eight years ago, but were then forced into the couloir and found that we had gone to a great deal of trouble for nothing, since the north side of the couloir, the one we could not see from above, was sufficiently well lined with good snow. This snow only reached part of the way down, but helped us past the very steep rocks. Where the couloir widens the sun could easily reach this snow and had caused it to slide off, but here the rocks on the right were climbable and we soon were out of all difficulties and well on the way to Lake Oesa. We reached the Wiwaxy Lodge at 7.30, just as our packer was arriving with the ponies. Our arrival disturbed a huge grizzly bear, who sat on his haunches some 150 yards away and looked us over thoroughly before he decided to amble off towards Cathedral.

When we awoke on July 23rd, there were several inches of snow on the ground, but we were not in the least put out. The packer had brought material for certain badly needed repairs to the cabin and the three of us spent all day at the task, repairing the floor and putting in a new door and new windows. Part of the 24th was spent in the same manner because climbing was out of the question. Leaving a little after 2 p.m. we easily caught the 5 p.m. to Lake Louise at Hector.

After a few days spent in Banff, waiting for weather

good enough to do a little climbing around Mt. Edith, I came back to Louise, to storm and snow.

On July 29th, and just to keep in trim, walked up Niblock alone and got some photos.

The Victoria Ridge

Rudolph and I left the hotel at 1.30 a.m. on July 31st, made the plain of six glaciers in two hours and reached the breakfast place at the foot of the Upper Victoria Glacier at 4.30, stopped for fifteen minutes, and at 6.45 were at the foot of the col between Collier and the North Peak of Mt. Victoria. Continuing at 7.20, reached the col itself at 8 and the summit of the North Peak at 9.50. So far we had trodden over well known ground, but the ridge uniting this peak to the main summit of Mt. Victoria, which now stretched in front of us, had been climbed only once before and that some ten years ago. At 10.15 I led off at a brisk pace and we were soon at grips with the treacherous rocks which form this ridge. As seen from the North Peak, the first half of the distance to the main peak looks harmless enough, but the climber is speedily disabused — suddenly one comes upon a perpendicular drop some fifteen feet high and the fun begins. Here, as on most ridges, it very seldom pays to traverse and we lost a little time on several occasions because the rocks on the Louise side looked a little less loose than those on the crest of the ridge. With very few exceptions, all traverses are made on the Louise side. After the fifteen foot drop the ridge narrows to about two feet and runs horizontally, being interrupted by deep cracks over which it is possible to step, then comes a gendarme which must be climbed. On its far side there is a high, nearly vertical drop with good holds which leads to a deep gap. The high black wall ahead can be readily circumvented and upon again landing on the arête one enjoys a stretch of good rock and some snow. The highest point between North and Main peaks

Photo, Val. A. Fynn

MAIN PEAK OF MT. VICTORIA AND INTERMEDIATE PEAK FROM NORTH PEAK

Photo, Val. A. Fynn

VICTORIA RIDGE, NORTH OF THE MAIN PEAK

Note Steepness of West Face

now comes into view, but another deep gap with very rotten rock must be crossed before reaching it. At 12.00 we rested on this summit until 12.30. From this point the climb becomes more difficult and the character of the ridge changes entirely soon after this summit is passed. An hour's climb up and down the many, but here not deep, gaps in the ridge and one emerges on a small platform overlooking Lake Louise and poised above a sixty foot drop down to a part of the ridge which is less than a foot wide. On the Cataract Creek side the ridge now falls sheer for a distance varying from 1,000 to 1,500 feet—any progress on that side is quite out of the question. The gendarmes become more and more formidable and, although the distance to the lowest point on the ridge, soon after which all difficulties disappear, is not very great, the tired muscles induce one to think that the day is not long enough to allow one to cover it. On this little terrace we rested and lunched from 1.30 to 2.10 and then prepared to rope down the sheer wall. The sling used for this purpose by our predecessors was still in place and in good shape, so we used it. It required a good deal of careful manoeuvring, but finally both of us sat side by side on the narrow ridge, ready to resume the journey. The next gendarme had to be turned and this required some awkward step cutting on steep, thin ice. This was followed by a long easy bit on the ridge itself right to the top of the next obstruction. A direct descent did not look inviting so a traverse was resorted to—this finally led to a very deep gap. A steep wall, a level bit of ridge, an easy gendarme, another gap, and we stood at the foot of the last serious obstacle, a huge yellow and red tower which appears to, and probably does overhang on at least three sides. Here, again, we traversed on the Louise side and although very steep and, perhaps, trying because of the extreme rottenness of the rock, this passage did not prove as difficult as expected. This obstacle behind us, we found it

expedient to continue the traverse a little further. Rudolph now took the lead and soon brought us back to the ridge. The rock here is firm and the perpendicular drop on the Cataract side is replaced by a comparatively gentle slope, not exceeding 65 or 70 degrees. Climbing along the dividing line between snow and rock, we gained height rapidly and at 5.46 were shaking hands on the Main summit. Knowing the length of the ridge to Abbot Pass, we proceeded at 6 p.m., making good time over comparatively easy ground, and at 8.30 topped the Southern peak of the ridge. From here on we were a little slow, but managed to make Abbot Pass at 9.50 and hit the glacier trail at 11.10. The walk to the hotel was somewhat trying, but we got there at last exactly twenty-four hours after our departure. We were amazed to find that a hot dinner and smiling faces were awaiting us as usual.

We were lucky to strike a cool and clear day; the view all along this exposed ridge is wonderful and the work most interesting, but dangerous in places because of the very rotten rock. This trip will be more interesting in the opposite direction and if a hut is ever built on Abbot Pass, it will not be abnormally long.

New Routes up Mt. Temple

Although I had often been in this district, yet I had never been able to summon enough courage to climb the highest peak of the neighbourhood, much as I wanted to do so. I finally decided to try and discover a route which would offer a little more attraction than the usual one from Sentinel Pass. The prospects from the Lake Annette side did not look entirely hopeless, so after several consultations with Rudolph and Edward, the former and myself left the hotel on the afternoon of August 5th and reached the shore of Lake Annette in two hours, overhauling our friend Reno and his ponies. Deciding that we could not take the horses to the col

north of Mt. Temple, we made camp on the north shore of the lake. Rain drove us into our tent just as the dinner gong sounded, but the shower did not last long and we had hopes for the morrow.

A long, steep snow couloir, well seen from Paradise Valley and from Saddle Back Pass, descends from a saddle high up on the northeast ridge and runs out on the col referred to. It was our intention to mount by the rocks east of the couloir to the snow saddle (1) at its head, cross the latter and then follow the rock ridge to where it runs into the glacier covering the upper portion of the north side of the peak. From the saddle the ridge rises in an easy slope to the secondary summit (2), then dips and becomes very serrated before rising very abruptly to the summit glacier. We expected our difficulty in the dip so well provided with formidable looking gendarmes. Looking at the mountain from Consolation Valley, it was found that an easy looking horizontal ledge runs below and past this broken part of the ridge offering a way of circumventing the difficulty. If this ledge is followed the ridge must be regained by means of one of a number of rather nasty looking couloirs. All of the difficult looking part of this ridge is in the black rock zone, whereby matters are made considerably worse, as any one familiar with the district will readily recognize.

Leaving camp on August 6th at 5.10 we reached the col at 6.45 in somewhat uncertain weather. After a fifteen minutes rest, we attacked the rocks on the left of the snow couloir. We had not advanced very far when we heard an ominous but familiar sound which caused us speedily to work away from the snow. We worked east until all traces of falling stones had disappeared, then continued the ascent. About two-thirds of the way up we were forced up to the snow in the couloir because of a perpendicular wall, but were, of course, protected by it and worked back east as soon as this obstacle had

been circumvented. Some short ice slopes led to a shoulder on the northeast arête and we faced the last and obviously difficult part of the ascent to the snow saddle. Very brittle and steep rocks of most peculiar formation and colour led to a steep ice slope which ended in a perpendicular chimney. Half way up, this chimney is blocked by two huge stones which I found far from secure. It became necessary to traverse out to the ridge on the left, along a very narrow ledge and then follow the ridge itself to the broad saddle (1), which we reached at 11.10—some two hours behind our schedule.

After a fifty minutes rest and some discussion, we made our second mistake. We had started too late and now we elected to adhere to our original programme and follow the ridge instead of turning the secondary summit and making for the horizontal ledge at the south foot of the black teeth. Everything went well until we struck the band of that hard, smooth and yet brittle black rock. Had we brought our climbing shoes we could have saved much time, but with hob-nailed boots, great care was necessary and we progressed but slowly. Erecting a stoneman on the secondary summit, we began the descent to the gap and by 2 p.m. were quite close to the big gendarme (3), so well seen from Saddle Back. We both agreed that even if we could pass the several gendarmes standing in this gap, we could not overcome the final pitch in the ridge, but opinions were divided as to the possibility of reaching the horizontal ledge on the south from where we stood. We finally decided to turn back, I urging this course strongly because of the fact that we did not think it advisable to go back to Lake Annette, and did not know of any other way down. Turning back at 2.30, we reached the snow saddle at 4.30 and stopped fifteen minutes for refreshments and deliberation.

The snow saddle on which we sat is at the apex of

Photo, Byron Harmon

MT. TEMPLE FROM CONSOLATION LAKE
Showing Routes of Ascent

Photo, Val. A. Fynn

MT. TEMPLE FROM SADDLEBACK
Showing Northeast Ridge

two ridges. We had utilized one of these on our way up from Lake Annette, the other descends in a direction at right angles to the Bow Valley. The continuation of these two ridges forms the sky line as seen from Saddle Back. From the subsidiary summit on this ridge, now crowned by a stoneman, a ridge falls southeast towards the Valley of the Ten Peaks and blocks the view south. Our immediate choice was one of these ridges. We knew all about the first, had seen enough of the second on the way up, and could now see a large portion of the third. Neither was attractive, but we did know that the further south we could get, the less would be the difference in height to be overcome before reaching easy ground. We decided to traverse south. An easy ledge led us in fifteen minutes to the ridge which runs southeast. The southeast face came into view and we saw at once that from here we could have reached the ledge below the difficult gendarmes on the main ridge without difficulty, and in a very short time. We even thought of spending the night on the spot and making another attempt over this promising route the next day, but finally decided to try and reach the motor car waiting for us at Moraine Lake. Below us, and between our ridge and the next one further south, was a huge amphitheatre, the lower walls of which appeared to be perpendicular. Yet a number of indications led us to believe that somewhere in a protected place in the back of the circus we would find a snow filled couloir. Striking straight down in the direction of Moraine Lake we soon came to extremely steep pitches, but the rock was sound and the prospects grew so much better at almost every step that we took out the rope and clambered down. At the foot of the second pitch we felt almost certain of success, the rope came off and we moved down and to the west at a great pace. At 6.45 we had reached the head of a hidden couloir full of very hard snow and considered our troubles were over. A

half hour's rest and down the snow we went to be very soon pulled up short because of an overhang not covered by snow. We had to use the doubled rope and left a sling behind. A little further a similar but much higher pitch proved a serious obstacle. We could not rope off, so traversed out of the couloir to the right and finally found some flaws in a high, straight wall which enabled us to get back to the snow not far from the place where the couloir, which so far was headed southwest, turns in a southeasterly direction and runs down into a little cove not far above the old Moraine Lake trail. This cove we reached at 8.45, the trail ten minutes later, and twenty more minutes saw us knocking at the door of Moraine Lake Chalet, to be welcomed by Miss Danks and to find that the car which we had ordered from Lake Louise had left an hour age because it had no lights and could therefore not be operated after dark.

After this experience, we each had several good looks at the southeast face of the mountain and worked out two ways of reaching the horizontal ledge below the bad black towers. The one up the amphitheatre we had used on our way down to the point where we had thought of spending the night, the other, up the well defined rib which limits a second and less pronounced amphitheatre on the west. This second amphitheatre is immediately west of the first, and separated therefrom by a huge buttress. The rib in question loses itself at the foot of a nearly perpendicular wall a little southwest of the summit, but gives access to a series of superimposed and nearly horizontal ledges along which we intended to traverse to the foot of the chimney near the black towers which was to lead us to the snow ridge.

This long traverse was obviously undesirable and in seeking a more direct route, we finally decided that the break in the wall above the horizontal ledges and just below the summit would afford a means of reaching the snow ridge not very far east of the summit.

We turned up at Moraine Lake on the 16th, it rained on the 17th. We turned out early on the 18th, but rain and then snow forced us back long before we reached the big wall.

We were back again on the 19th because of a promising change in the weather, and were off to a fair start at 5.05 on August 20th. The day proved to be the most perfect of the season. Following the trail to Lake Louise as far as the first striking and deep water course, now dry, we struck straight upwards in the direction of the rib we had selected and at 7.30 were at the foot of the big wall just south of the summit. Here we had breakfast and decided to take the more direct route as being the more natural one. Traversing northeast along the foot of the wall, we came to an easily recognizable snow and ice filled couloir, followed the rocks on its near side, traversed to the opposite side at the first opportunity, and bearing away from the couloir, found a steep but safe rock rib which led us to the second steep pitch in the break at a point immediately below the summit. Here again it was necessary to traverse northeast until near the east side of the break where the second pitch seemed easiest. Strong fingers and long arms came in very handy right here for the wall is very steep and the holds small and far between. Only a short distance now separated us from an ice filled couloir leading to the easy ground above the big wall, but iced rocks intervened so we had to unpack the rope. The couloir was reached and proved cold but easy, and very soon we were plodding up the easy rocks just below the ridge. The latter was reached at 11.40 and disclosed a magnificent view of Paradise Valley. The ridge itself is heavily corniced and looks very imposing —the ice cliffs on the north being particularly beautiful.

Twenty minutes for photography and thirty-five minutes later, at 12.35, we were on the summit and enjoying a most perfect view.

We lolled around until 1.50 and then turned to descent by the usual route. We reached Sentinel Pass at 2.55 and Moraine Lake Chalet at 4 p.m. highly pleased with our trip. I can warmly recommend this route as not very difficult, not longer and incomparably more interesting than the usual one from Sentinel Pass.

There was no holding Mrs. Fynn after her success on Mt. Pinnacle and nothing but a snow mountain would now do. It was to be Lefroy, but we finally compromised on the *North Peak of Mt. Victoria* and sat watching our opportunity. It took some close watching, too, for our time was nearly up and the weather most uncertain. Finally, we thought we saw a chance and turned in early on August 24th. The next morning Mrs. Fynn, Rudolph and I left the hotel at 3.17. The moon was shining but there were some clouds and we were not dead sure of a good day. As we worked up towards the upper Victoria Glacier, the dawn began to break and we presently witnessed the most glorious sunrise either of us had ever seen. At that time there were many well shaped clouds about, and our first intimation of the unusual display was the appearance of a dirty terra cotta colour on Lefroy and the huge face of Victoria. Part of each cloud was similarly tinted and as they were much broken, the effect was very beautiful. The presence of mists about Lefroy and the Victoria ridge added to the weirdness of the scene. Presently the colour cleared, then gradually changed to a most brilliant cherry red. The under part of the clouds was of this same colour, while the sky in the east was purple, blue, green and yellow. Gradually the red faded as the sun appeared, but the purples, blues, greens and yellows were intensified. After the sun was up, things assumed their normal colouring, but Rudolph and I knew that our time was limited and that a snow storm was due. Reaching the breakfast place at 6.40, we continued at

7.15, making the col between Collier and the North Peak at 11.12. After an hour's rest, the summit was reached at 2.10 in somewhat cold, but most beautiful weather, giving no indication of what was to come. So fine was the weather that it almost fooled us into believing that our fears of the morning were unjustified. It was, however, nothing but a lucky and temporary change in the wind. Leaving the top at 3.06 we were back at the col at 4.30, rested half an hour, passed the breakfast place at 7, reached the plane of six glaciers at 7.45, and a dead tired but game woman entered the hotel at 9.30 p.m.

The next morning we had snow right down to the hotel. A few days later, when we entered the train which was to take us way south, the mountains were still covered with deep, fresh snow.

A TRIP TO MOUNT ROBSON

By H. E. Bulyea

"Gone to the mountains." This sign first hung outside my office door in July, 1917, when, as a "Graduating Member" of the Alpine Club, I made the trip to the Cathedral Camp. When it next appeared—greatly to my regret—it was too late to join the Paradise Camp of 1918, and the evening of July 31st found two "Active Members" waiting for the west-bound G.T.P. at Edmonton with tickets in their pockets reading "Mount Robson and return." The word "return" did not impress us so much at this stage for, full of anticipations and memories of the mountains, it semed sufficient to think only of the two weeks ahead which we had set aside for our vacations.

The train was late, and the hour or so we had to wait seemed long; but it passed eventually, as did the night, and the early morning light revealed in the west that familiar purple line of hills that we knew to be the promise of greater things ahead — the grand old mountains.

I need not describe the rest of the trip to our destination on the railroad. Anyone who has travelled through the mountains is not unmindful of their grandeur and appreciates to some extent the charm of these great hills; but to live among them, if it be only for two short weeks, is to appreciate them as one can in no other way, and it is of this I wish to tell.

I see I have omitted my companion's name. Lest some of the readers of the Alpine Journal might think it was "Martha," I will hasten to inform them that it was William Johnstone, artist, also of Edmonton.

On reaching Mt. Robson Station we had confirmed a rumour, heard on the way, that there were no packers in that part of the mountains. "Curly" Phillips had gone to the war, so we decided to act as our own packers—sort of voyageurs of the mountains. In regard to crossing the Fraser we heard conflicting opinions—some not very encouraging—but one bit of information sounded good and proved to be genuine: that a cook car stood on the track just ahead and to this car we hastened, where we put its reputation for hospitality to the test, as well as our capacities. Here was more good luck. We found the conductor of the work train had taken our contemplated trip the year before and gave us much valuable information that we had been unable to obtain before leaving home. The crossing of the river, that from previous accounts looked like a very hazardous undertaking, he made to look quite simple when he pointed out a spot about a mile and a half ahead where a log-jam formed a natural bridge. To this spot we repaired when next the work train moved westward, and an ideal camping ground was located, where that night we were lulled to sleep by the roar of a nearby waterfall.

Next morning we set up our main tent, built a fireplace and generally prepared what was to be our base of supplies. We did another notable thing. We decided who was to be the cook, and the choice fell upon the only candidate for the position, Mr. Johnstone. When I learned that his artistic taste was not all confined to the brush and pencil, it was arranged that the election was to be by acclamation. This did not quite end our difficulties, however, for although Mr. Johnstone had come from the land famed for its porridge, he could not recollect the exact proportions of its recipe; but of one part he was quite sure and that was that the old Scotch woman used a handful of meal to the person, and while this rule should never be departed from, the rest of the ingredients might reasonably be left to guess work.

Results proved that his guess as to water was not far out, but I shall always have a suspicion, which I formed at the breakfast table, that the rule intended for the measurement of the meal he had absent-mindedly applied to the salt. The cook was duly reprimanded for being wasteful of an article which had gone up in price during the war, and signs of retrenchment in this particular were evident at the next morning repast—in everything but the water; this we managed later. On the start our appetites were a little critical, but later on I will show you, dear reader, where this latter characteristic of the epicure had occasion to keep itself in the background.

On the third morning after our arrival, we made ready for the first stage of our trip. After crossing the log-jam we made our way up the north bank of the Fraser until we struck the old Foley trail, then we faced westward towards the Grand Fork River. We had travelled but a short distance when, to our surprise, we saw standing right on the road a few yards ahead a huge brown bear. I believe this was a new experience for both of us. At least the writer can testify that previously he had never been frightened by anything more tangible than the fresh tracks of this animal, and that nearly thirty years ago. I had often wondered since then how I would really feel if I were to meet the beast himself and now, all unprepared, I was given the opportunity. I shall not say that I did anything heroic. The bear did not give me the chance. We both sent messages to headquarters asking for instructions, and the bear's answer came back first, which read: "Yes, run"; and he acted on the advice before mine came.

The trip up the Grand Fork was strenuous, but the glory of the scenery was wonderful and our heavy packs often seemed to loose their weight as some new scene of beauty burst upon our sight. After fording a small, icy stream about half a mile after leaving the Foley trail,

Photo, H. E. Bulyea

OUR CAMP ON THE FRASER RIVER AND THE LOG-JAM

Photo, H. E. Bulyea

MT. ROBSON FROM THE GRAND FORK OF THE FRASER

which we took to be a tributary of the Grand Fork, we pulled off our boots and socks and while these were drying we feasted our eyes on the object of our trip, Mt. Robson. We had seen it from the distance before, but now we were at comparatively short range and the sight was grand. The customary clouds hung about the peak and we decided to wait awhile, hoping that, as each cloud passed, the blue sky behind it would reveal the top. Here we sat, the artist sketching and the camera fiend snapping; but after hours of waiting we decided that Mt. Robson had ways of its own and these ways were stubborn ways, for not a glimpse of the real peak did we get. Then we pulled on our dry clothing and pushed ahead, only to find that what we had supposed to be a stream emptying into the Grand Fork was really an overflow of its banks, and we had to recross it several times. After a few more similar experiences we learned to dry our footwear only when the need of fording was past. The weather had been very warm previous to our arrival and this accounted for our difficulties in having to cross so much water on what seemed to be ordinarily a dry trail.

The rest of our difficulties for the day consisted in climbing hills, fighting mosquitoes and keeping on the trail. This last was not due to a poorly marked trail, but to side attractions furnished by the small fruit which seems to grow very abundantly in the region. There were saskatoons to the right, raspberries to the left and huckleberries in front, so how could we make progress?

We were not out to break records that day — one seldom does on the first day's tramp in the mountains— but, had we been so inclined, these constantly recurring berry patches would certainly have upset our plans. We reached Lake Kinney at last, and it was camping time. After looking along the shore of the lake for a suitable place to pitch our tent and finding the ground everywhere damp from recent showers, we at length

discovered, at the lower end of the lake, a log camp that we had passed without seeing. To this we returned with thankful hearts. But other visitors had preceded us, for we saw that porcupines had recently frequented the place; their teeth marks were on everything that looked good to a porcupine. We decided to become usurpers, however, and after hanging our wet clothing over the fire and our other goods out of the way of small animals, we retired for the night; but not to sleep, for just as the author of these few lines was about to enter into that happy state, he was aroused by his companion's half whispered exclamation: "I think he is about." In this hazy state of mind one is apt to connect things up wrong, so my first thought was of the bear of our recent acquaintance, and I arose expecting to see his form at the open door. It was too dark to see, so I said: "What's about?" Mr. Johnstone replied: "I think it is the porcupine." I was quite awake by this time, so I decided to satisfy myself on this point and, jumping out of bed, I grasped two brands from the fire and rushed toward the door, expecting to hear hurrying feet beyond. But I was doomed to disappointment, so I shut the door and went back to bed. I had begun to think that perhaps Mr. Johnstone had been mistaken and after all there was no porcupine (or bear or wild cat or ——) when, "No chance," our unwelcome visitor said again, and this time he said it from the roof. We could see him now, faintly against the sky, as he peered down through the smoke hole into our dimly lighted abode.

Vigorous prodding with a stick upon the under side of the roof caused him to depart, but not for good, for the next time he signalled it was on the outside of the logs near our heads and with his teeth he tried to lull us to sleep. His harmony was so fascinating that we listened all night, but when we sought him next morning to pay him for his trouble, greatly to our disappointment, he had gone. In the morning we discovered that while

we had "packed" our heavy tent "fly," which we did not need, and an ample supply of cooking utensils, we had brought very little to cook, so we made another trip back to the base for more food. The day was nearly spent when we reached again Lake Kinney. Mr. Porcupine paid us another visit that night, but we had anticipated him by shutting the door and, knowing who he was, we did not waste much time listening to his entertainment.

Early next day we started on the second stage—this time with less baggage. From the appearance of our map we decided we could make the trip to Berg Lake and back in one day, but the map did not show the difficulties of the trail. At the upper end of Lake Kinney, we crossed the stream that flows in at this point and followed a well beaten trail which wound its way up over the shale at the foot of the mountain on the west side. Here we turned round to take in the view, and Lake Kinney in the morning peaceful light looked very enchanting from our elevated position.

But more wonderful scenes lay ahead and after a short rest, a sketch and a snapshot or two, we turned toward the Valley of the Thousand Falls—not a thousand by number, but their myriad voices, echoing and re-echoing across the valley, would lead one to believe there were as many, if one were to judge by sound alone. Here we met the first great difficulty on our trip, for that which made the beauty and charm of this delightful valley—the falling water—had gathered into a very formidable mountain torrent as it approached the main stream.

After searching in vain for a better crossing further up we decided the best place to ford was near the lower end. Before making the attempt, however, Mr. Johnstone discovered another difficulty for, on account of our misconception of the trip, only enough grub had been brought to make two hungry men one good, square meal.

By being frugal we managed to save out enough to make another light repast, then we forded the torrent and began the ascent of the other side. It seemed more like real climbing, for this part of the Robson Pass winds back and forth over places which look from below like no place for a tenderfoot. But once on the way it was not difficult and the views as we went were more than ample reward for all the toil. Along the trail glimpses of most wonderful waterfalls often met our eyes and once we crept round the rocks to discover the cause of a vast amount of spray that rose from the gorge between us and Mt. Robson. Such a wonderful sight! It was as if some vast caldron had its abode in this awe inspiring spot, and one could not but wonder at the mighty, irresistible force that Nature had put into this rushing, tumbling body of water. How helpless one feels when gazing upon such a scene! Man's power, in which he glories, becomes in the face of such wrath a puny thing, and he wonders how he ever had anything but contempt for his small ability.

Once more we take the trail and, that we might conserve our frugal store, we indulged in berries on the way. With frequent rests and still more frequent meals we at length reach the summit of the pass only to find that, on account of the altitude, the small fruits we had hoped would help out our scanty supplies had recently ceased to exist, but the strawberries we had eaten had satisfied us for the time and we decided to save the remnants of our last meal for the next day that we might have something to sustain us on our return journey. So on we went, passing Emperor Falls, up the pass and beside the rushing stream until we found ourselves at the foot of Berg Lake. Here another torrent had to be crossed and this proved to be the most formidable of all. After several vain attempts at bridge building, a final effort was crowned with success and the author proudly crossed that dancing, swaying pole with a step that

might pass for the cake walk. Mr. Johnstone followed with the Highland fling.

This undertaking past we pushed on round the north side of the lake toward the upper end, where we had heard the Alpine Club camped in 1913, and we hoped there to find something that would make a bed for the night. The lake was high and the old trail in places was under water, so for a considerable distance our travelling was rendered difficult by the thick underbrush higher up. The trails, when found, were very faint and easily lost. Once, when we thought we had a good one running in the right direction, we discovered after following it for quite a distance that it had been made by mountain goats and, from its ever-increasing upward tendency, it must have been developed by "Active Members" of the species. It was discouraging work, but about sundown, on turning a point, the framework of the old camp burst upon our sight and a cheer broke from the throats of two weary travellers; for, twenty miles from civilization, even the signs of where mankind had been, looked like home. From that moment our cares vanished and when we found inside an old store, which stood where the cook's tent had been, a tin of rice, a can of milk and part of a can of Wagstaffe's jam, all in good condition, our happiness was complete. An old tent hanging on a pole was our next important discovery, and when we had made our bed that night under some lofty spruces, after a well earned though stolen meal, we needed no rocking to sleep. In the middle of the night we had to get up and replenish our fire; for the nights up the glaciers do get cold. It was a beautiful clear, starlight night and the great snow-capped peak of Robson, silhouetted against the sky, was a sight I shall never forget; and the great stillness, broken only by the occasional roar of falling ice or rock, filled one with a sort of delicious sense of awe.

Next day we explored the foot of Robson Glacier,

visited the cave and the source of the Smoky River, and about noon began our homeward journey. This was, for the most part, the reverse of the upward trip, and in more ways than one. We went with lighter hearts but heavier grub baskets, and for once we were thankful for an added burden. We crossed the same streams and passed over the same rocks, but once having had the experience they did not seem so formidable. Near night we reached Lake Kinney, where we found our irrepressible friend had paid his respects to a pair of boots I had left hanging over the fire to dry. I had been reserving these to wear back to Edmonton in order to look somewhat respectable, but Mr. Porky had decided my pride needed a fall, so he set to work with that in view. I think he left quite satisfied that he had accomplished his task. I know I should have been had I been able to make as many holes in his skin as he made in my boots.

On the fifth day of our trip Mr. Johnstone wished to do some sketching about this beautiful lake and, to lighten the burden of our ultimate move, I decided to carry down to our base some of our outfit. On reaching a point on the Foley trail where our camp first came in view I saw a great smoke rising right beside it. I made my way in record time across the log-jam and up the other side to find that a smudge we had started, the night of our arrival, had followed a root of an old stump and, after smouldering for about a week, had suddenly been fanned to life by a sudden gust of wind. After a strenuous hour's work it was practically subdued, but not too soon, for had I been a few minutes later our tent and supplies would have gone up in smoke. I afterwards learned that the fire ranger had discovered it at about the same time and had visited the scene when I was at the height of my struggle, but he did not make himself acquainted and decided to leave the stage to the chief actor who, in this case, was the villain of the play. That night I rejoined Mr. Johnstone at Kinney Lake and the

next day we moved the balance of our packs down to camp number one.

Here good luck came again. Imagine our satisfaction after travelling on short rations, doing our own cooking and working up appetites fit for lumberjacks, when Charlie Nelson, a cook of no mean repute amongst mountaineers, stepped in and announced that he would exchange his services for the shelter of our tent. A bargain and a good one it proved to be for us. I had but one doubting moment, and that was when he announced next morning, that he was going to give Mr. Johnstone a "Mulligan." That seemed a strange dish to feed a Scotchman and I remonstrated with Charlie on those grounds. He replied that it was composed chiefly of stewed huckleberries, and that if it would make it any more palatable to anyone, he would call it a "Wee Macgregor." So then he was given a free hand. No one seemed to worry much about its name after all had taken a sample and, when the cook thoughtfully let slip its old name, even Mr. Johnstone, like Oliver Twist, asked for more.

After another week of fishing, berry picking, sketching and photographing, we very reluctantly said good-bye to those delightful surroundings. On reaching home the sign still hung outside my office door, but with a different significance. Gone to the mountains were my stomach troubles and my other troubles, where I had left them, and should any reader need a cure, I would prescribe a trip to Mount Robson — the dose to be repeated when necessary.

SCIENTIFIC SECTION

NOTES ON MOUNTAIN NOMENCLATURE

Coming of age of The Geographic Board of Canada

By R. Douglas

On the 18th of December, 1918, the Geographic Board of Canada came of age, having been brought into being in 1897. One reason for the creation of the Board was to secure uniformity of nomenclature. To quote the Order-in-Council establishing it, "Discrepancies are frequently found in the geographic names which appear in the publications of the Dominion Government and particularly upon the maps issued by the various Departments of the Service."

Another reason was to avoid duplication of names. "As the country is being explored, new names are given which are often duplicates of existing names or which are otherwise objectionable. Sometimes two or three names are applied to the same feature and with the difference in the orthography are the causes of considerable confusion."

A third reason was that "the revision of the geographic nomenclature of Canada should not be left in the hands of foreign body." It was pointed out that "the United States Board has been dealing not only with the names in the United States, but also with those in Canada, deciding by what names the rivers and mountains of Canada shall be known."

Photo, Val. A. Fynn

SENTINEL PASS
Looking Towards Mt. Lefroy

The extent of the Board's authority is given in the following sentence: "All questions concerning geographic names in the Dominion which arise in the Departments of the public service [are to] be referred to the Board; . . . . all Departments [are to] be directed to accept and use in their publications the names and orthography adopted by the Board." As the Dominion Government is the main publisher of maps, and such maps are the base of other maps, it is evident that any name which does not meet with the approval of the Board will have a short life.

The authority of the Board was strengthened two years later when provision was made for the appointment of representatives of the several provinces, which, at the same time, bound themselves to abide by the Board's dcisions. In practice every name is submitted to the representatives of the province concerned before it is dealt with by the Board, so that the Board's rulings are backed by the support of both Dominion and Provincial publications. Slightly over 1,000 names have been approved by the Board since its formation. Of these, 63 per cent. are personal or proper names, 28 per cent. are descriptive names, and 9 per cent. are of Indian origin. The latter are, in the main, descriptive.

The majority of the Indian names were not applied by the Indians themselves to the peaks, but were given originally to other features, such as rivers, that had more influence on their daily life. The transference of the name of a river to that of a peak is in consonance with natural principles. Martonne, in his investigation of names in the Southern Carpathians, found that while we are accustomed to base nomenclature on the summits, the peasants bestow names on the first instance on the valleys. A mountain crest had, as a rule, different names in the valleys which it separates. It is quite a good practice, then, to extend the use of a name to an entirely different feature related to it, to call, for

example, a mountain by such river names as Saskatchewan, which means "swift flowing," or Athabaska, which means "Where there are reeds," or Maligne, which means "wicked." It also obviates the multiplication of names.

The hills of the prairies figured in the Indians' daily life and were given specific names. The majority of these are maintained in English translation; for example: Clear, Devil's Head, Dried Meat, Hand, Knee, Medicine-lodge, Peace, Thickwood, Touchwood. No Indian names seem to have been retained in the Rocky Mountains, but there are two well known ones in translation, Rocky Mountains itself, and Crowsnest Mountain. Peaks named after Indians include Kananaskis, Peechee, Tekarra and Tzuhalem.

A number of Indian dictionary words have been applied to mountain peaks by modern travellers. The Indian practice, however, is more to describe a physical feature by a sentence than by a word. Such artificial names include the following: Chetang (hawk), Hungabee (chieftain), Kiwetinok (on the north side), Maskwa (bear), Naiset (sunset), Nikanassin (first rocks), Odaray (brushy), Tatei (windy), Titkana (bird), Waputik (white goat), Wenkchemna (ten), Wiwaxy (windy), Yoho (Cree Indian exclamation of surprise), and Yukness (sharpened).

An appropriate descriptive name that has not been duplicated becomes every day more difficult to find. Most simple designations referring to trees, plants and animals have been used. There are: Birch, Larch, Pine-Spruce, Tamarack and Wood Mountains, as well as Forget-me-not, Lichen and Lychnis Mountains. Named after animals are: Antler, Beaver, Badger, Bear, Bee, Caribou, Camelhump, Catamount, Chak, Chetamon, Cougar, Deer, Dragon, Dromedary, Eagle, Elk, Goat, Greywolf, Grizzly, Groundhog, Lynx, Marmot, Moose,

Panther, Porcupine, Ptarmigan, Sealion, Sheep, Terrapin, Trout, Turtle, Whistlers and Wolf Mountains.

The colouring of mountains as they strike the eye has given the names: Argentine, Black, Blackhorn, Blue, Burnt, Copper, Coppercrown, Crystal, Ebon, Emerald, Grassy, Olive, Purity, Red, Redtop, Silver, Silvertip, Snow, Snowcap, Snowdrift, Snowy, Striped, White, Whitecap and Whitehorn.

Warfare has given the names: Bastion, Citadel, Field-Marshal, Fortress, Gendarme, Guardsman, Helmet, Lookout, Observation, Rampart, Ravelin, Rearguard, Redan, Redoubt, Sentinel, Sentry, Sergeant, Signal, Tent, Vidette and Poilus, the latter commemorative of the French soldier in the Great War.

The general outline or some prominent feature of the mountain has given rise to the names: Anchor, Anvil, Bald, Beehive, Cairn, Castle, Cathedral, Cliff, Cornice, Double, Flat, Flattop, Gothics, Hump, Island, Minaret, Monument, Needle, Pinnacle, Pyramid (including Chephren and Cheops), Roundtop, Sawback, Scarped, Sharp, Spire, Steeples, Smooth, Sugarloaf, Table and Wall.

Aspects of the weather when a peak was visited are commemorated by Mounts Aeolus, Airy, Blustry, Misty, Stormy, Thunder and Windy.

Geological characteristics or peculiarities of peaks have suggested such names as Andesite, Anticline, Coal, Conglomerate, Copper, Crater, Fossil, Granite, Iron, Lodestone, Mica, Porphyry, Sandy, Slate, Sulphur, Syncline, Talus, Trachyte, Trap and Zinc.

It has ever been the custom of British explorers to bestow personal names upon features discovered. Mt. Nelson was named by David Thompson, over a hundred years ago, after the victor of Trafalgar. To-day the names of the great allied leaders have been similarly bestowed on peaks. If features had never been named

after dead men mountain nomenclature would have been much poorer.

Rupert Brooke, the young English poet-soldier who died at Gallipoli, wrote, after travelling through the Rockies, that he had found them windswept and empty. The ghosts of the past did not haunt them. The dead did not return. This feeling is bound to be left in the mind of any tourist who visits a country without making himself acquainted with its past history, but it can be mitigated if the features are named after pioneers who have traded and explored in the region.

This policy of entwining the history of the country in its place features is pursued, wherever possible, by the Geographic Board. The early furtraders and travellers are thus commemorated by such mountain names as Blakiston, Douglas, Franchère, Hector, Henry, Howse, Sir Alexander Mackenzie, Moberly, Palliser, Rae and Simpson. The Selkirk mountains commemorate Lord Selkirk, the founder of Winnipeg. The Canadian Pacific Railway route explorers of the '70's, who succeeded the furtraders, are similarly commemorated.

It has been mentioned that the name Rocky Mountains is a literal translation of the Cree Indian name "Assiniwati." Legardeur de St. Pierre, whose Journal, 1752, tells of the founding of Fort Lajonquière on the North or South Saskatchewan in 1751, speaks of the mountains as Montagnes des Roches. The French usage survives to-day in the names of such individual peaks as roche Bonhomme, roche à Bosche, Boule roche, roche Carcajou, roche de Smet, roche Jacques, roche Miette and roche Ronde.

Not all the names mentioned above have been dealt with by the Geographic Board, partly for the reason that the peaks are in regions that have yet to be mapped. It is undesirable, however, that any of them should be repeated.

Sometimes several parties of travellers narrate adventures met in an un-mapped region, each with its own set of names. The result is confusion. As many as half a dozen names have been bestowed in recent years on some peaks in the Windermere region of the Selkirks. Such an undesirable state of affairs would be avoided if climbers before publishing names would take up the question of their fitness with the Geographic Board directly or through the officials of the Alpine Club.

NOTE.—At the request of the Canadian Alpine Journal, Mr. R. Douglas, Secretary of the Geographic Board of Canada, has graciously written the above concise and useful article on mountain nomenclature. The object of the Journal in requesting Mr. Douglas to write such an article is to give those of our members who explore and climb in new or little known parts of the Canadian Rockies some guidance in the selection of names to commemorate their activities and to define the feature described or mapped in their publications.

All such explorers or climbers desire to confer names and, as Mr. Douglas has pointed out, duplication can be avoided and permanency insured by consulting with the Secretary of the Board before publishing.

From time to time the Board publishes a Report (fifteen have already been published) which gives a full list of all names authorized. I do not know, but I think it likely that a copy of the latest report could be obtained from Mr. Douglas on application by a person or party making an extensive practice of exploration in the Canadian Rockies and of publishing the results. Such an assistance would obviate all duplication and probably lead to acceptance by the Board of the majority of the names conferred. For correspondence, address R. Douglas, Esq., Secretary, Geographic Board of Canada, Department of the Interior, Ottawa, Canada.—Editor.

SNOW IN THE ROCKY MOUNTAINS PARK

By N. B. Sanson

SNOW

When one has, in an enthusiastic moment, consented to write something on snow, he finds on mature deliberation that he has been very rash, for he has many enemies, so many knowing practically more about snow than the writer.

How beautiful is the snow in alpine regions, its sharp line cutting the clear blue sky, beautiful as it spreads away many a mile over the trackless plateau, where no footmark betokens the presence of intruder on the lofty solitudes, save, perchance, the narrow track left by the little feet of Mountain Goats on their pilgrimage from pasture to pasture — beautiful as it hangs in massive cornices over the edge of some dizzy precipice, or bends looking down into the awful depths of some mysterious crevasse!

Beautiful is the snow in the act of falling! How gentle is its motion! How the flakes hover and waver and wander and dance to and fro in their descent, and how quietly and softly each lies down at length in its appointed place to do its humble but important work!

How little is a snowflake! How light and airy, hovering to and fro as if its weight was not enough to bring it to the earth, and yet when one little flake lies upon another, and hour after hour and day after day the process goes on, how vast and formidable the accumulation. See along the mountain slope the thundering avalanche! How insensibly it has been forming, flake

Photo, Val. A. Fynn

SHOWING SNOW ACCUMULATION ON EAST RIDGE OF MT. TEMPLE NEAR SUMMIT

by flake, but what a power of destruction has been organized. And now there is a little increased action of the sun, and a little loosening of the hold of the under surface, and some little motion of the atmosphere, and the vast mass is set in motion. Slowly, very slowly at first, but soon with ever accelerating speed it rushes down the slope, and dashes past the cataract, and overleaps the chasm, and outstrips the swift Mountain Goat, and thunders down the glen, and overwhelms the accidental traveller, railway-worker or train. Yet that destructive avalanche is made up of tiny influences, single flakes of snow.

The first snow to remain on the mountains about Banff is that which may fall about the 15th of October, and from then on to the end of May or the beginning of June. Any rain which may fall in the valley will mostly fall as snow on the mountains.

By the beginning of June this year the six hundredth trip, in over sixteen years, will have been made to the top of Sulphur Mountain. For some years the trip was made weekly and then fortnightly, in all weathers. Some interesting information has been collected. We have some years' records of wind, years of temperatures and barometer, and general conditions and phenomena.

While at this meteorological work the museum has been benefited by collections of all classes of insects, spiders and various other material. Nights spent in the building* have mostly been used in making up Mountain Returns.

The writer has recollections of some few winters of exceptionally heavy work, when wind and fresh snow would require a new trail being broken each week through a long winter, and again, of a very few winters in which the trail after being broken once or twice has remained in good shape nearly all winter. May is usually

*Meteorological Observatory on crest of Sulphur Mountain.

the worst month for Sulphur Mountain, being both poor snowshoeing and walking.

On May 30th, 1916, after the snow had been going very well, and the Prairie Anemone (Pulsatilla Hirsutissima) was in flower along the top of the mountain (here it is of deeper purple than below and may be found in flower long after it has disappeared from the valley) and one could almost get along without snowshoes, lo, and behold! it was necessary to make the trip through nearly two feet of fresh snow. At this time there were fifty-three inches of snow on the trail near the top, six hours' tramping from Hot Spring to hut, sinking two feet with snowshoes and bad going till after June 15th. Usually one can take a horse to the top by June 15th at least.

The maximum winter's depth of snow, measured near the top of the trail on Sulphur Mountain, occurred in 1910 when, on March 7th, it was between seven and eight feet. The minimum depth was on March 25th, 1912, twenty-three inches.

Snow varies in density and 1917-18 was one of the few winters of good snowshoeing, the snow packing well. This past winter — 1918-19 — was a poor one for snowshoeing. The condition of the snow was peculiarly different than for many years past. The mild weather of December and January gave the snow a slippery foundation and its interior was of granulated particles or icy spicules, through which one's snowshoes would drop to the bottom and often catch a crusty surface on the withdrawal.

Some large snowslides have occurred in the mountains of the Rocky Mountain Park years ago, clearing out an extensive area of timber. These slides may, perhaps, never reach as large proportions again or at least for some or many years.

Occasionally one has experienced extra trying trips, even on Mount Sulphur. Just one example or so. On

December 11th, 1917, snowshoeing heavy, a N.E. blizzard along top, twenty-seven degrees below zero, snowing heavily and quite dark, snow much drifted, over an hour going along top—distance about 2,000 feet. On another occasion my long-haired collie, accustomed to follow me on the mountains, contracted the worst possible case of pneumonia.

The best winter conditions occurred in 1905, when snowshoes were only necessary for six trips — from January 3rd to February 6th The quickest winter trip for snowshoes, March 6th, 1905. From Museum to building on top of mountain, 2 hours and 25 minutes (when firewood was carried up also). Return trip 1 hour and 25 minutes, a total of 3 hours and 40 minutes; and one trip from top of the mountain to town in 1 hour and 5 minutes. The longest trip took 7 hours and 15 minutes to top from town. Return 3 hours and 20 minutes, a total of 10 hours and 35 minutes, heavy going, November 17th, 1913.

In the year 1908 twenty-four snowshoe trips were made and in 1909 twenty-two trips. These are maxima.

Heavy Snowfalls

October has seen a foot of snow on the mountains. On the morning of November 13th, 1896, it began snowing heavily at Banff and only close on the evening of the 15th, when about four feet of snow lay on the ground. A fresh N.E. wind drifted the snow somewhat at times. With temperatures averaging 30 deg. below zero, for six days after the storm, Lake Minnewanka did not freeze over till the seventh day, when the minimum temperature was only zero and it did not appear to be in anyway very windy. Some winters ago Banff only had three weeks' sleighing and that indifferent. Considerable snow fell, but three distinct Chinooks followed shortly after good snowfalls.

Inverse temperatures sometimes occur on Sulphur Mountain during extremes of cold in winter. Here is a particularly noticeable example.

Started from town under exceedingly cold conditions, northeast wind, 30 deg. below zero, frozen toe by arrival at Hot Springs—two miles. As one rose higher, the air became noticeably warmer till, on reaching the building, the temperature was four degrees above zero and quite pleasant, very light southwest wind. On the return the air became bitterly cold not very far above the Hot Springs.

For the past three years a snow survey has been carried on in the vicinity of Lake Louise about the end of May. At certain heights on a few mountains the weight of undrifted snow is taken and its water equivalent calculated. When an average is struck, and by comparison with previous years and making allowance for likely weather conditions, a very fair idea can be got as to what effect this mountain snow when melted will have on the streams' height, etc.

Photographs are taken each year from stated points. Any change in the lay of the snow, etc., is thus arrived at. The lay of the snow in the winter of 1917-18 was different than usual. December weather had much to do with this, and in consequence the water contents of the snow found some different or older channels than usual, which was at least in part the cause of a marked lowness of all rivers, creeks and temporary streams flowing into the Bow River from Lake Louise and east to the prairie. The water which flooded the Bow Flats near Banff Town I believe came from the west of Lake Louise.

In consequence of the different lay of the snow on most mountains, new snowslide routes were created and many old snowslides were very much less than their usual size or failed to materialize at all. Many new routes were seen in the Rocky Mountains Park.

Some snowdrifts in exposed places become hard enough to walk on as a rule in February, and they give good snowshoeing often before February, the sinkage being unappreciable. February is almost undoubtedly our usual best snowshoeing month.

As to snowshoes for mountain work, the strong hunting snowshoes are the best. The toes are uncurved and therefore grip the snow.

Red Snow (Sphaerella Nivalis)

I have not yet seen this Red Snow plant anywhere on the mountains about Banff to my recollection, but it may be seen on the mountains west. My notes give Monarch and Cathedral Mountains; when these algae are ripening and ripe they assume a blood red colour, the early form being pinky, which appears more plainly when one makes impressions on the snow.

I would consider that this would be one of the reasons for not eating snow. What with pollens, etc., and even minute insects, everyone as a rule knows that it is best always to boil snow water.

In early Arctic expeditions it was apparently not known what the colour of the snow was caused by. In fact I am led to think it was at one time put down to swarms of butterflies coming out of their chrysalis state, when, as is known, they leave a few drops of blood behind.

ANIMAL LIFE ON THE SNOW

Insects—Snow Fly

In mild weather in winter some curious insects appear on the snow on the mountains and less commonly on the valley snow; what looks like a sort of spider is really a fly and belongs to the Tipulidae or Crane-fly family. This funny looking, long legged insect is a wingless sort of Crane-fly, only having the balancers (for these balancers take the place of what in other flies are a second

pair of wings). These curious flies (Chionea Volga, Harris and Chionea Nivicola, Doane) go dead like spiders when alarmed. They come out of moss, etc., and from under and above the snow, and are mostly found quite a long way from anything but snow, living on very minute material.

Snow Flea

The Snow Flea (Achorutes Nivicola) I once saw in countless thousands on Sulphur Mountain trail, which was black with them from near the Hot Springs to about three-quarters of the way up the mountain. They live on still more minute material than the snow fly. Sometimes a yellow mass like pollen is seen on snow and ice in the spring. These may be the larvae of the insect. How they live under such conditions is a wonder.

Boreus brumalis, Fitch

Another hopper is small and metallic blue-green, having a curious beak and the males with an egg boring appendage. These go dead and are very fierce, pugnacious looking creatures, and quite dolled up, as one might say. The beak is for piercing their more minute neighbours and sucking their blood. These are often common.

I found my first Grylloblatta campodeiformis (see Canadian Alpine Journal, 1917, p. 12, for description) on the snow in the fall, on Sulphur Mountain some years ago. These live under rocks on the mountain in summer.

One is able to collect some good material on the snow, as everything is then more easily seen and must fall from the trees, etc., during snowfalls in mild weather in the fall and spring. In this manner the writer has collected spiders, flies, bettles, etc., while on some of the Alpine Club's climbs the following insects have been seen on the snow on glaciers and mountain top slopes: Dragon flies, flies, bugs, etc. I presume these creatures have been delightfully flying over the snow in the warmth

of the long summer day and taking too long to pass over the snow area, have been chilled, and falling on the snow, remain perhaps to be devoured by some other living creature.

BIRDS ON AND IN THE SNOW

First of all, the prime mover in the art of living under snow is the grouse; with us the Richardson's grouse, Dendragapus Richardsoni (a fine, large bird), allied to the Blue or Dusky Grouse. These birds fly from some tree into the deep snow and sometimes remain under the snow for days, especially during stormy weather. They take this cover after feeding up as well as possible. The writer has been fortunate in seeing them under all degrees of emerging from under the snow and on one moonlight night saw over a dozen fly up, and these all within a few feet of each other on Sulphur Mountain. These birds preferably go under the soft snow on the trail up Sulphur Mountain, mostly at from 6,000 to 7,000 feet, and to have one fly up when least expected and feel its wings almost touch your face is not altogether rare. A friend of mine and at one time a member of the Alpine Club, who has distinguished himself in the Flying Corps during the war, had one of these birds suddenly fly up during a delayed trip down from Sulphur Mountain one winter night and cautiously interviewed me about it next day. He was not quite sure whether or not the sulphur springs were the abode of evil spirits and one was taking a stroll or flying exercise. Very occasionally the dive is made in crusty snow by mistake and then one gets a specimen for mounting.

Leucosticte

In June these birds go up on the mountains and feed on the spring spiders, etc., which come out to sun on the snow. They are then, as nearly always, very tame like.

Nuthatches and Chickadees are only seen or heard

occasionally in winter on the mountains, preferring the valley. White winged and the American Crossbills are only very occasionally seen on the mountains, being more often found on the summit of passes where the temperature seems to be milder than the more exposed mountain tops.

Grosbeaks, Waxwings, are also only occasionally seen. Whitetailed Ptarmigan, Clarke's Nutcracker and Canada Jay are often seen in the spring on the mountains.

FOUR FOOTED ANIMALS

The Mountain Rat, Bush Rat or Pack Rat (Neotoma Cinerea) exercises himself on the snow of the mountains, chasing mice, and becomes altogether too familiar and malodorous when occupying a building, attic or cellar. The white footed mice are common on all mountains, they do more scraping than gnawing, have lovely, large glowing eyes and easily become quite tame. The snowshow rabbit (Lepus Americanus) is not so common as it was ten years ago. By a spread of the large hind feet they can skim along the snow like a flash of lightning when alarmed. In very fresh snow they sink from four to five inches. It is a simple fact known to most people that the hind footprints in the snow are foremost. The hind legs are thrown forwards as it jumps, so some can be excused if they follow the rabbit the opposite way to which he is going or has gone. This hare (as he does not burrow but lives under brush, etc.) commences to change to white in October and commences to change back to dark gray in April and May.

The Lynx (Lynx Canadensis) is the hare's arch enemy. Oh, how he does spring on his poor, weak prey from some eminence! One always, when seen, gives the rabbit a good scare to save its life. Lynx also spread out the feet to act as snowshoes and go along as softly on

the mountain snow as does the domestic cat on our carpets at home. They are extremely supple and their cry on a winter's night is weird. They sink five to six inches in fresh snow. A year of many rabbits means a years of many lynx, and vice versa. They travel a long way up and down the mountains. Grouse, of course, are also food for them, and they often spring on the ever wary grouse as he emerges from the snow. The grouse try to escape the lynx's chance of following on their trail by making a sudden break in their footprints in the snow and then fly some distance and enter the snow with as little evidence as possible.

The Black Bear (Ursus Americanus) hibernates, at least occasionally, on the upper slopes of Sulphur Mountain. I think it was one of our late Alpine cellar bears that I saw the huge tracks of in the snow in November or December going up the slopes of Sulphur Mountain, late in hibernating, no doubt from feeding on the flesh pots of kind friends.

The Red Pine Squirrel (Sciuris Hudsonicus richardsoni) is seen most of the winter on some mountains. He makes tunnels through the snow and uses strong language when one comes on him unexpectedly.

The Says Chipmunk and the smallest chipmunk (Eutamias Lateralis and Eutamias Quadrivittatius) hibernate sometime in October and come out again in May.

The Porcupine does not always hibernate and has been seen in the coldest weather under deep snow conditions high up on Sulphur Mountain, sticking to a group of white barked pine trees for several days, where he got his daily food.

The Shrew Mice — insect-eating forms of mice— emerge from the snow in winter, as also the red backed Vole. The former can stand extreme temperature. They have a very thick, downy fur. The writer has seen them in water swimming about after an insect or so when it

has been well below zero. The shrew mice have long snouts and very tiny eyes. Their teeth are very beautiful in form and arrangement, and the smallest shrew mouse is the smallest mammal in the world, but they are extremely fierce. Watch them hunt and see the dash they go at and the pounce they make on their prey. Three of these very small shrews were put in a glass tumbler and they fought till only one was left, the others being devoured by the conqueror.

ANNUAL SNOWFALL FOR BANFF, ALBERTA

Year	Snowfall	Year	Snowfall
1895*	94.2	1907	93.3
1896	97.5	1908	78.0
1197	68.8	1909	128.7
1898	75.5	1910	73.7
1899	100.6	1911	91.7
1900	72.4	1912	55.1
1901	71.8	1913	80.0
1902	111.0	1914	82.6
1903	87.2	1915	49.5
1904	76.6	1916	130.0
1905	34.1	1917	79.0
1906	47.0	1918	100.5
		Total	1884.6 inches

Average annual snowfall, 81.9 inches, or 6 ft. 9¾ in.

1916 maximum annual snowfall, 130 inches, or 10 ft. 10 in.

1905 minimum anual snowfall, 34.1 inches, or 2 ft. 10 in.

*Not included in total. Incomplete; April, 7 days no record; May, only 10 days' record.

SNOWFALL FOR THE WINTER PERIOD

November, December, January, February, March and April

Year	Inches		Maximum fall	
1890-91	24.8	(2 ft. 0 8/10 in.)	Dec.	9.0 in.
1891-92	78.5	(6 ft. 6 5/10 in.)	Dec.	35.5 in.
1893-94	54.0	(4 ft. 6 in.)	Nov.	13.5 in.
1895-96	66.9	(5 ft. 6 9/10 in.)	Dec.	21.7 in.
1896-97	82.7	(6 ft. 10 7/10 in.)	Nov.	48.6 in.
1897-98	73.3	(6 ft. 1 3/10 in.)	Nov.	26.5 in.
1898-99	60.0	(5 ft.)	Jan.	18.8 in.
1899-00	64.6	(5 ft. 4 6/10 in.)	Mar. (Nov. next)	16.9 in.
1900-01	58.6	(4 ft. 10 6/10 in.)	April	14.3 in.
1901-02	62.3	(5 ft. 2 3/10 in.)	Jan.	17.5 in.
1902-03	89.4	(7 ft. 5 4/10 in.)	Mar.	38.7 in.
1903-04	68.6	(5 ft. 8 6/10 in.)	Feb.	17.3 in.
1904-05	37.4	(3 ft. 1 4/10 in.)	Dec.	12.8 in.
1905-06	23.8	(1 ft. 11 8/10 in.)	Jan.	7.7 in.
1906-07	70.0	(5 ft. 10 in.)	Jan.	16.4 in.
1907-08	65.7	(5 ft. 5 7/10 in.)	Mar.	15.9 in.
1908-09	93.7	(7 ft. 9 7/10 in.)	Jan.	41.1 in.
1909-10	96.9	(8 ft. 9/10 in.)	Nov.	37.6 in.
1910-11	67.9	(5 ft. 7 9/10 in.)	Jan.	31.2 in.
1911-12	48.2	(4 ft. 2/10 in.)	Nov.	16.1 in.
1912-13	61.0	(5 ft. 1 in.)	April (Mar. 14.2 in.)	14.5 in.
1913-14	64.3	(5 ft. 4 3/10 in.)	Nov.	20.1 in.
1914-15	49.3	(4 ft. 1 3/10 in.)	Nov.	24.7 in.
1915-16	92.8	(7 ft. 8 8/10 in.)	Jan.	28.5 in.
1916-17	41.6	(3 ft. 5 6/10 in.)	Mar.	11.3 in.
1917-18	74.9	(6 ft. 2 9/10 in.)	Dec.	31.5 in.
1918-19	86.2	(7 ft. 2 2/10 in.)	Nov.	27.6 in.

Total 1757.4 inches

Yearly average 65.1 inches, or 5 ft. 5 in.

Winter of maximum snowfall, 1909-10—8 ft. 9 in.

Winter of minimum snowfall, 1905-06—1 ft. 9 5/6 in.

In twenty-seven years the maximum fall of snow for a winter has taken place oftenest in November (8 or very nearly 9 times), January being next with 7 times. It only occurred once in February.

NOTES ON SOME OF THE MORE COMMON ANIMALS AND BIRDS OF THE CANADIAN ROCKIES

By William Spreadborough

Note.—Mr. William Spreadborough has for many years been field assistant to the following scientists: Mr. James McEvoy, late of the Geological Survey of Canada, Professor John Macoun, Dominion Naturalist, and Mr. James Macoun, Dominion Biologist. Mr. Spreadborough is a skilled collector and as a hunter and trapper cannot be surpassed. He has kindly contributed the following notes for the Journal.—Ed.

Grizzly Bear

Ursus horribilis horribilis, Ord.

In 1898 I was attached to Mr. McEvoy's party when on a Geological Survey Expedition through the Yellowhead Pass. I was to do some Natural History work and also to collect what plants I could.

We saw very few signs of big game all the way through the pass to Tête Jaune Cache. We crossed the Fraser River at the Cache and travelled south to the Canoe River, where we camped for a few weeks. From here we made several trips up into the mountains and saw signs of big game: Caribou, Mountain Goat and Grizzly Bear.

One morning, Mr. McEvoy, myself and Sam, our cook, rolled our blankets and, with food enough for two days, started up the mountain on the east side of Canoe River. We crossed over a ridge that was well above tree line, with plenty of snow in large patches. We only stayed out one night and on our way back to camp had to cross the ridge where we crossed it the day before. Just before we reached the summit I heard a loud snort and Mr. McEvoy said: "Oh, look at the big grizzly!" Well, before I could get from behind Mac, she had

disappeared over the ridge and left her three cubs. When we reached the top of the ridge, they had all gone out of sight. The young ones were not far away; we could hear them calling, "Baugh, baugh, baugh."

Now, a few hundred feet below where we stood, was a good sized patch of snow and across that a string of large tracks, which proved later to be the tracks of the old bear. If anyone had told me that a grizzly could travel that distance in so short a time I should never have believed him.

In a little while the cubs came from under a cliff into full view. They appeared to be able to follow their mother's tracks until they reached the snow, when they seemed to lose the scent and appeared to be lost. They all sat up on their haunches and started cuffing each other with their fore paws.

Now Sam begins to talk. He says: "We can get those little bears. We will call them back, but we shall have to get out of sight." Now it's Mac's turn to do some talking, and this is what he said: "What are you going to do if the old bear comes back as well as the young ones." Sam answered and said: "Keep her down with rocks." Then Sam says to me: "Call them back." As I never heard an old bear calling her young ones I knew nothing about it and had to ask Sam what kind of a noise to make, and he said: "Like a calf." I am not very good at imitating calls of animals but did the best I could. At the first call, those little bears cocked their ears; they were still sitting on the snow. At the second call, they dropped on all fours and started back up the hill as fast as they could, calling "Baugh, baugh," as fast as they could utter it.

The only firearm in the party was a small revolver that Mac carried in his hip pocket—not much of a gun to kill grizzlies with.

The little bears did not see us until they were about twenty-five feet from us. You should have seen them

Photo, J. M. Macoun

HOARY MARMOT OR WHISTLER IN JASPER PARK

Photo, M. P. Bridgland

YOUNG HOARY MARMOT

get up on their hind feet in a hurry and show fight, and they certainly did some yelling and snorting. Just then I was thinking: "Now for the old bear," and I was looking for some nice handy rocks to roll down the mountain side.

By this time Mac had got his artillery at work. The first shot struck one of the cubs in the head, but too low down to enter the brain. It fell and Sam struck it in the ribs with a rock about the size of a man's fist, which made the dust fly from its jacket. It then got up again.

The second shot struck another in the shoulder and passed through its lungs. By this time, they thought it about time to leave and all started down the hill. As we had to go the same way we shouldered our packs and followed them. We soon overtook the one that was shot through the shoulder and Sam finished it with a geological hammer. I packed it down to the snow, and then it was that we found out that the large tracks we had seen from the top of the ridge were the footmarks of the old bear.

We stopped on the patch of snow and skinned the cub, and while doing it the other two cubs were close by. Sam wanted to kill them with rocks, but Mr. McEvoy did not approve of it. He wanted to know what we were going to do if the old bear was to come back. I think, myself, that we should have been in a pretty bad fix.

I don't want people to think that all grizzlies will do the same as this one, for more often they stay and protect their young.

I saw no signs of grizzlies in Jasper Park the two summers that I was there.

Hoary Marmot—Whistler, Siffleur
Marmota sibila Hollister

The Hoary Marmot is chiefly to be found abundant about tree line in rock-slides, but is found much lower down. I have seen them in rock-slides in Jasper Park

at an altitude of 4,000 feet, well down in the timber. They are also found fairly common in the alpine meadows, where they burrow beneath large boulders. They were very abundant along the border of a large meadow just over the Shovel Pass (Jasper Park) in a rock-slide that is about half a mile wide. One could hear their long, shrill whistle everywhere. It was a common thing to see two or more on one large rock.

The long, shrill whistle seems to be a warning, for when one whistles all within hearing are seen making for the rocks. When badly frightened they utter short, sharp whistles in such quick succession that one would have some trouble to count them. They also utter a low-sounding whistle that one could scarcely believe came from the same animal.

I can't say how many young they have at a birth. I have killed four half-grown ones at the mouth of one burrow, but whether they have more I do not know.

They were common in the rocks along the face of the glacier at the foot of Mt. Edith Cavell (Jasper Park), also in a large alpine meadow east of Mt. Edith Cavell. They were also very abundant at the west fork of McGillivray Creek in the Lillooet country.

The length of an adult is about two feet six inches; colour, grey, head and feet blackish; food, grass and plants.

Parry's Marmot—Columbian Ground Squirrel
Citellus columbianus (Ord.)

I have found these in several of the alpine meadows in the Rockies and as far west as Mt. Quest, B.C.; this or another variety were very abundant at Midway, B.C., where they were nearly as great a pest to the farmers as the gophers are on the prairies.

A number of years ago I was on Mt. Forgetmenot, south of Calgary, and there I saw a number of them and secured several.

I was with Mr. J. M. Macoun in Jasper Park, in 1917, and, while camped by the lake at the foot of Mt. Edith Cavell, I climbed the mountain east of Mt. Edith Cavell. After getting above tree line one comes to a wide alpine meadow and in the meadow, just over the ridge, comes upon a large colony of these little animals. As soon as they see you, they make for their burrows, where they sit up on their hind legs and as one approaches they utter a short, sharp whistle and disappear into their burrows. It was near the end of August that I was on the mountain and the young were about half grown at that time.

In 1918 I was again with Mr. Macoun in Jasper Park and, in August, we were camped well up in Shovel Pass on the west side of the summit not far from tree line. Quite close to where we were camped there was a colony on the hillside, facing the south. Although I often heard their sharp little whistle I never could see any of them, as the plants were too tall, so one day I took five steel traps with me and set them in the mouth of the burrow that I found, and in one day I caught three. I opened the stomach of one and found it filled with the grouse berries — Vaccinium scoparium — which grew in great abundance along the hillside. Their food consists principally of plants and grass. They are not seen much on cloudy or rainy days, but when the sun is shining they are to be seen running about feeding or making for their burrows as one approaches.

Just over the summit of Shovel Pass there is a large alpine meadow and in all the drier parts of the meadow one finds them in abundance. One can hardly make any mistake in them, as they are greyish on the back and reddish on the under side, and are easily recognized by their short, sharp whistle. When sitting on their hind legs they look more like stakes than anything else.

I have never seen any of them putting up anything for the winter, so I suppose they must hibernate.

Little Chief Hare—Rocky Mt. Pika, Haymaker
Ochotona princeps (Richardson)

They are to be found from the Rockies to the Coast Range At the head of Shuswap Lake I have seen them in the rock-fills along the C.P. Ry. and in rock-slides along the west shore of Mara Lake. This is the nearest to sea level that I have found them.

The reason that they are seen more above tree line is because there is very little to hide them. They are much more abundant along the border of the tree line than they are above it. At our camp, last summer, in Shovel Pass there is a large rock-slide and in it they were very plentiful. I had a number of steel traps set for marten and weasels, all baited with meat, and I had to go round every night just before dark and take the little hares out and reset the traps, as I nearly always found one in each trap.

The adults are the size of small Guinea Pigs and, with their rounded ears, look very like them. In colour they are greyish and so near the colour of the rocks that it is very hard for one to see them unless they should happen to move. They very often, when one is approaching them, utter a squeak that is something like this: "Ske-e-eke." I have often walked over a rock-slide and not one in sight, but after walking over I would hear them behind me giving their little squeak.

Their food above tree line is chiefly grass, which they cut and put into piles to dry. When it is dry they place it under a rock where the water cannot reach it; this they use for food during the long winter. Along timber line their food consists of almost anything in the shape of plants, and if one was to take the trouble to look over one of their stacks of food he would likely find twenty or more species of plants.

I know nothing of their breeding habits as I am usually not in the mountains until July or August. The young then are nearly as large as the adults. They are

easy to recognize as there are no other animals in the mountains like them and their squeak is like no other animal's.

Bushy Tailed Wood Rat—Mountain Rat, Pack Rat

Neotoma cinerea drummondi (Richardson)

I have seen them from Banff to within ten miles of Chilliwack and in 1894 I saw signs that I am almost sure were theirs in the cutbank of Seven Persons' Creek, a short distance east of Medicine Hat; in the bank there was a large pile of bones, horse manure and cactus, which I am almost certain was carried there by the bush rat. In 1891 they were fairly common at Banff. There is a small cave in the side of the mountain on the south side of the railroad, a short distance from the station. When I was in it one day I saw several and shot one; the others disappeared in the rocks.

At Devils Lake (Lake Minnewanka) there are some pillars of conglomerate. On the side of one I saw a stack of sticks and leaves; as it was out of reach I cut a stick and gave it a poke, when, to my surprise, a large rat ran out of it and climbed up the side of the pillar as easily as a squirrel.

In the woods around Rossland there are a large number of miner's cabins that have been abandoned, and in some of them one sees in the bunks, where the men slept, great piles of rubbish, such as tin cans, sticks and bones, in fact almost anything that the rats can lay their teeth on.

A short distance below Hazelton, on the Skeena River, there are a number of cabins that no one is living in. The first night we camped there in 1917 I killed three with a stick and afterwards caught several in steel traps. They are very easy to trap; any kind of bait will do. In one of the cabins on the Skeena there was a huge nest composed of all sorts of things.

At Lillooet in 1916 I caught them in every rock-slide

that I set traps in. I also saw them in a miner's cabin. When one enters a cabin they leave the nest and climb up the side of the cabin, and sit on a log and strike it with their hind feet, just as a tame rabbit does in its hutch.

In Jasper Park, in 1917 and 1918, they were common. I caught them in all the rock-slides that I had traps in. I only saw one nest in the park; that was in rock-slide near the waggon bridge that crosses the Athabaska River, under a large rock.

I think this is the most handsome of all the rats, with its buffy-grey back and sides, and the under part pure white from its chin to the tip of its tail; all the feet are pure white. In all my experience I have never, never known them to pack anything from our tents.

Mantled Ground Squirrel
Northern Mantled Spermophile
Callospermophilus lateralis tescorum Hollister

It is easily distinguished from the Chipmunk by its large size and different marking. It has one whitish stripe on each side reaching from its shoulders to its hips, bordered by two blackish stripes; head and shoulders bright brown or chestnut; middle of back, grey; tail blackish, the long hairs along the sides tipped with buff; chin white; belly light grey.

The first one that I saw was in the mountains north of Griffin Lake in 1889. Our hunter had shot some goats the day before and I went with him to help bring some of the meat down to camp. The dead goats were lying on a patch of snow and, as we approached, I saw one of the little animals running away from one of the goats. When we reached it we discovered that it had been eating one of the goat's ears.

They were common in Jasper Park in 1917 and 1918. Like the Chipmunk, they lay up a goodly supply of food for the winter. I shot one last August that had

fully half a teacupful of roots and seeds in its pouches. Not content with what it had in the pouches, it also had its mouth full of dry grass for its winter's nest. A few days later I saw one with its mouth full of the cottony heads of the cotton grass that grew in great abundance along the stream flowing down Shovel Pass.

They are to be found quite low down, but are more frequently seen on rocky ridges above tree line. I caught a number of them in steel traps that I had set in rock-slides for weasels and marten. The traps were all baited with meat.

Chipmunk—Canadian Mountain Chipmunk

Eutamias ludibundus Hollister

This is easily distinguished from the above by its small size and markings. It has five blackish and four whitish stripes along its sides and back with a whitish stripe reaching from the tip of the nose to behind each ear. They lay up a large store of food for the winter.

I shot one in Jasper Park that had its pouches filled with timothy seed. It is wonderful to think of the time it must take them to collect such small seeds and store them for the winter. I have also seen them collecting the wild grass seed along the railroad in the Park, and also the seeds of berries.

The Chipmunk in Ontario goes into winter quarters fairly early in the fall and comes out about the end of March. They lay up a great deal more food for the winter than they require, and I have dug out from a nest a large quantity of beechnuts in the spring that had not been eaten during the winter. In one case, in the fall, I took from a nest about fourteen quarts of clean grain, chiefly wheat and oats. I think the habits of the western forms are much the same as those of the eastern species.

Flying Squirrel—Mountain Flying Squirrel

Sciuropterus alpinus alpinus (Richardson)

Flying Squirrels, I should judge, are fairly common in Jasper Park, as I caught ten on the hillside about a mile west of Jasper, where a spring flows down a small valley. My line of traps were only one hundred yards long, and only five of them.

I can't say what their habits are as they are nocturnal and are seldom seen in daylight unless disturbed. In Ontario I have seen a number when I have been felling trees, when sometimes as many as ten or a dozen would come out of one hollow tree. I have seen them on bright moonlight nights sailing from tree to tree. They climb up and then sail down at an angle of fifty degrees, and I have never seen one miss the tree that it wished to reach. The only sound I have heard them utter is a squeak, very similar to a mouse. In the daytime they roll themselves into a complete ball, their broad tails wrapped over their heads. I have seen several of their nests in hollow trees, but never found any food in them.

While collecting at Edmonton, some years ago, I found two nests, one in a crow's nest. The nest, proper, was made of the inner bark of the poplar tree, torn into fine strips. It contained four young ones; I saw nothing of the old ones. A few days later I found the other nest, where a flicker (Golden Winged Woodpecker) had had its nest. It also contained young ones and I secured the old one. I hardly think that they hibernate, as I have seen a number of their tracks in the snow during winter time in Ontario.

I can't say whether their habits at Jasper are the same or not. I opened the stomachs of some that I caught at Jasper. They were full of fruit of some kind, I think the high bush cranberry.

Hudson Bay Red Squirrel

Sciurus hudsonicus hudsonicus Erxleben

They are abundant in Jasper Park, and in August are busy cutting the cones from the spruce trees, which they gather and place in large heaps usually in a damp place beneath a pile of brush or in rotten wood. They also cut the cones from other trees such as jack pine, Douglas fir and balsam. Their nest is usually placed near the food supply, in the branches of a tree that has very thick foliage, and is about the size of a bucket. It is made of fine dry grass sometimes mixed with the inner bark fibre of the balsam poplar and the poplar. In winter, squirrels will eat frozen beef, and I have caught numbers of them in steel traps that were baited with meat for weasels and marten. Their call note is a long vibrant cherrrrrrr, and in the spring time and late summer is heard throughout the woods.

On one occasion, when in the woods, I saw two of them fighting in the top of a tall tree. They clinched and rolled up like a ball, the consequence being that they both fell from the branch. After falling some fifteen or twenty feet they let go of each other, and one managed to seize a branch; the other fell about a hundred feet and was unhurt, for no sooner did he hit the ground than he made for the tree again and climbed to the top to finish the fight.

On another occasion, in the winter, a number of us were working on a stream some distance from camp, so had to take a lunch basket with us, and in it were some cookies. After we had been working some time I happened to look up and, to my surprise, I saw a squirrel making off with a cooky. I then placed my coat over the basket thinking that would keep it way but it did not, for in a short time I saw it running away with another cooky; it had crawled under the coat.

There are a number of fungi that they eat. Some are eaten fresh, while others are placed in the bark and

branches of trees where they dry, but whether the squirrel ever goes after them again is a question. I have never seen any signs of where a squirrel has eaten any dried fungi in the winter, but I have seen where they have dug through three feet of snow and brought up seeds that they had buried in the leaves three months before. They eat various kinds of berries, and sometimes the tender shoots of fine trees.

They are easily tamed, and are interesting pets. We had one in a cage and my brother usd to tickle it with a straw. It would roll and tumble and play like a young kitten, but only with my brother as the others were strangers to it.

Golden Eagle

Aquila chrysaetos (Linnaeus)

They are not common. I have not seen more than half a dozen, and only three in the mountains. One day in July, 1906, I was up a mountain above tree line and had just started to return when I heard a great rustling noise up in the air. At first I thought it must be a meteor, but, on looking up, I saw a large Golden Eagle, with its wings more than half closed, swooping down on something. I was sorry that I was not on top of the ridge as I should have liked very much to have seen what its victim was, but the eagle disappeared over the ridge, so I failed to see what it was after.

I saw one on the west branch of McGillivray Creek in the Lillooet country in 1916. I also saw one in Jasper Park in August, 1917. All that I have seen in the mountains were above tree line.

The only place that I have seen them breeding was in a high, rocky cliff on the Labrador Peninsula, when I crossed from Richmond Gulf to Ungava Bay with Mr. A. P. Low, of the Geological Survey of Canada.

Richardson's Grouse

Dendragapus obscurus richardsoni (Douglas)

The two months that I was in Jasper Park in 1917 I only saw two coveys, one near the mouth of the Miette River and the other near the waggon bridge that crosses the Athabaska River. In one covey were five young ones and in the other, three.

The following summer I was in the Park again and again saw two coveys; both contained five young ones. The first was near the bridge, the other about two miles south of Jasper. They seem to prefer the more open country.

One day, while hunting along the dry hillsides I came upon a big male with his tail spread over his back and all his feathers ruffled, making him look twice his natural size. His wings were trailing on the ground and he was strutting about like a turkey gobbler. This was the only male I saw during the two summers I was in the Park.

In the breeding season the males give a loud hoot at short intervals. Unlike the Sooty Grouse of the Coast Range they do most of their hooting on the ground, while the other is usually found hooting in some tall tree; otherwise their habits are about the same.

In colour they are much the same. The males are dark slate above and several shades lighter on the breast. The tail of Richardson's Grouse is black to the end; the Sooty Grouse has a grey band on the tip of its tail rather more than half an inch in width. The females of both species are greyish and rather smaller than the males. I have never found but one nest. It was under a charred log in an open place and contained five eggs.

Richardson's and the Sooty Grouse are the next largest of our grouse to the Sage Grouse, and very few of the last species are to be found in Canada.

Grey Ruffed Grouse

Bonasa umbellus umbelloides (Douglas)

The two months that I was in Jasper Park in 1917 I saw no signs of them, but the next summer they were fairly plentiful. I saw three coveys; one on the shore of Horseshoe Lake, one on Beaver Dam Creek and another on the Miette River, near its mouth; I also saw single birds in different parts of the Park.

On the 13th July, Mr. Macoun and I camped on Cabin Lake Creek about a mile west of Jasper, where the waggon road crosses the stream. We were there two weeks and every night a grouse used to drum on a big balsam-poplar tree that had fallen in a willow thicket, not more than fifty yards from my tent. It started to drum about nine o'clock. I used to fall asleep before it quit, so I can't say how long it kept it up into the night. We moved camp and were gone for two weeks and then returned to our old camp and, believe me, that old fellow was still drumming on the same log — but not every night. I went out one night, just before dark, and saw him sitting on the log, but he would not drum while I was looking at him.

One day I was within ten feet of one that was drumming on a log in a thicket. I stood and watched him drum several times. They make the drumming noise by striking their wings together in front. When I was a boy in Ontario my brother and I were in the sugar bush making sugar. A Ruffed Grouse used to drum on a rock quite close to camp. We would pelt him with snow-balls and he would fly away a short distance, but as soon as we were gone he came back to the same rock although in full view of us.

The females on leaving the nest cover the eggs with leaves unless one comes upon her suddenly, in which case she has not time and leaves them uncovered.

The Ruffed Grouse are found mostly in thickets along

streams and wet places. They may be very plentiful, but without a dog to flush them they are not easy to see.

Franklin's Grouse—Fool-hen

Canachites franklini (Douglas)

They are a western form of the Spruce Partridge of the east. The difference in them is so slight that an ordinary person would not notice it. The two summers that I was in Jasper Park I only saw three, in the thick woods just east of Mt. Edith Cavell. I secured all three —two young and an adult female.

All through British Columbia they are called fool-hens. The reason is that when bushed they fly into the nearest tree and are so tame, it is said they can be snared with wire or piece of twine fastened to a pole. I believe the Indians do it, but I have never done it myself.

They are one of our smallest grouse. The male is very dark, almost black, and has a bare patch over each eye that is bright red, The female is not nearly so dark in colour as the male and is easily recognized by the small size.

White-tailed Ptarmigan

Lagopus leucurus leucurus (Swainson)

Willow Ptarmigan

Lagopus lagopus albus (Gmelin)

I have found the White-tailed Ptarmigan on all the mountain ranges from the Rockies to the Coast Range. I have nearly always found them high up, and usually where there are plenty of large rocks. I think that they stay near the rocks on account of birds of prey, as there is no other protection for them above tree line. I have seen females with tiny young ones on the border of the tree line, so I think that they likely make nests beneath the scrubby balsam trees. All that I saw in Jasper Park, except females with young, were on the tops of the mountains, and always near broken rocks. When high

up the food of the White-tailed Ptarmigan consists chiefly of the leaves of the smallest of the willow family.

While camped in Shovel Pass I climbed a mountain north of the Pass, which by the map is about 8,014 feet, and on the top I came upon six. I secured the lot and they proved to be all adult males. They were amongst broken rocks. A few days later, on the south side of the Pass just over the summit, where there is a large alpine meadow, I was keeping to the border of the meadow on the look-out for more Ptarmigan, thinking it a good place for them. Here there are great masses of sandstone that have fallen from the high cliff's above and, sure enough, I had not travelled far before I came upon a female with six or seven young ones. They were out in the meadow, but, as soon as they saw me, they ran for the rock-slide. I managed to secure the old one, but the young took to the high cliffs and, although I could hear them calling, I could not see any of them. As I had already collected nine, and ten was the limit, I did not look much for them, but continued walking along the border of the meadow. In a short time I came upon a male on the rocks by a patch of snow. I secured him and that finished the White-tails.

As it was still early in the day I thought that I would look for something else, so left the rocks and walked down into the meadow. I had not gone far, and was getting near some patches of scrubby balsam, when I saw the wing feathers of a Ptarmigan that made me wake up. A little further on, to my surprise, up got five Ptarmigan that I had never met in the mountains before.* I was rather handicapped, as I was carrying a butterfly net at the time, but was able to secure two with

*Specimens of the Willow Ptarmigan, Lagopus lagopus albus (Gmelin), were secured by J. H. Riley, of the Smithsonian Institution, in Moose Pass, when attached to the Alpine Club Expedition to the Mt. Robson region in 1911. As Jasper Park adjoins Moose Pass it is likely the Ptarmigan referred to above are the same species.—Ed.

the first shot. I followed them from one bunch of balsams to another and succeeded in killing two more; the other disappeared in the scrub and I was unable to flush it again.

After walking about a mile through the meadow, which was very wet, with deep moss growing in it, I came to scrubby balsams that grew in dense masses. Here I found plenty of Ptarmigan signs: paths in the grass and white feathers. It was not long before I flushed three. I secured one, but they got wise and took to the scrub, and without a dog it was impossible to flush them again. I think that there were a number of them in the scrub as I saw plenty of signs.

When flying they utter a loud "cuk-cuk" in rapid succession. I named them Willow Ptarmigan, but they appear to me to be much brighter in colour than the ones I killed in the north. In their stomachs were seeds and willow leaves. When I was in the Lillooet country Mr. Williams, a miner, told me that he had shot Willow Ptarmigan at the head of the east fork of McGillivray Creek, at the foot of Mt. McGillivray.

NOTE.—In 1911, The Alpine Club of Canada organized and carried out an expedition to the Mt. Robson region via Yellowhead Pass, in charge of the Director, A. O. Wheeler, and made a photographic survey, which resulted in the first detailed topographical map of the great mountain—the highest of the Main Range—and its vicinity. The map covered an area which embraces the largest part of the present Mt. Robson Park, and the expedition had much to do with the reservation of that Park. The expedition also visited the Athabaska Valley and Maligne Lake, within what now constitutes the Jasper National Park. A full account, with map of Mt. Robson region, will be found in the 1912 issue of the Canadian Alpine Journal, Vol. IV.

In collaboration with the expedition was a party from the Smithsonian Institution of Washington, D.C. This party collected specimens of the mammals, birds and plants of the region. The results were published by the Alpine Club of Canada in a special separate issue, with map of Mt. Robson region, which accompanies Vol. IV. In it the collection of mammals is described in an article by N. Hollister, the birds are described by J. H. Riley and the plants by Paul C. Standley, all three, specialists of the Smithsonian Institution. Both issues are well illustrated.

All the mammals and birds referred to in the foregoing notes by Mr. William Spreadborough are dealt with scientifically, and many

others. While not complete lists, the collections of all three subjects were full ones for the short time—little more than two months—at the disposal of the collectors.

Both issues can be obtained from the Secretary-Treasurer of the Club, Mr. S. H. Mitchell, Sidney, Vancouver Island, B.C., Canada, on application.

Price of Vol. IV., Canadian Alpine Journal $2.00
Price of Special Number accompanying Vol. IV... 1.00

—Ed.

ADDITION TO LIST OF MAMMALS OF JASPER PARK, ALBERTA

By Rudolph Martin Anderson

(Published by permission of the Geological Survey of Canada)

In looking over the mammal collection of the Geological Survey of Canada recently, I found a male specimen of the Least Weasel, *Mustela rixosa rixosa* (Bangs), taken on the Miette River, Alberta, July 11th, 1898, by William Spreadborough (No. 623, Victoria Memorial Museum, Ottawa).

This specimen of the smallest species of the North American carnivores measured (from the dry skin): Total length, 175 mm. (about 6⅞ inches); tail, 29 mm.; hindfoot, 20 mm. This species, like most of the northern weasels, is in summer brownish above and whitish below, but turns completely white in winter, differing from the other weasels in having the tail much shorter in proportion and with no black tip to the tail at any season.

The Least Weasel was not found among the mammals taken by the Alpine Club Expedition to the Mount Robson Region (Hollister, Canadian Alpine Journal, 1912), nor among the specimens taken by Mr. Spreadborough in Jasper Park during his work there in 1917 and 1918 (Canadian Alpine Journal, 1918), and should be noted as one of the very interesting mammals found in Jasper Park.

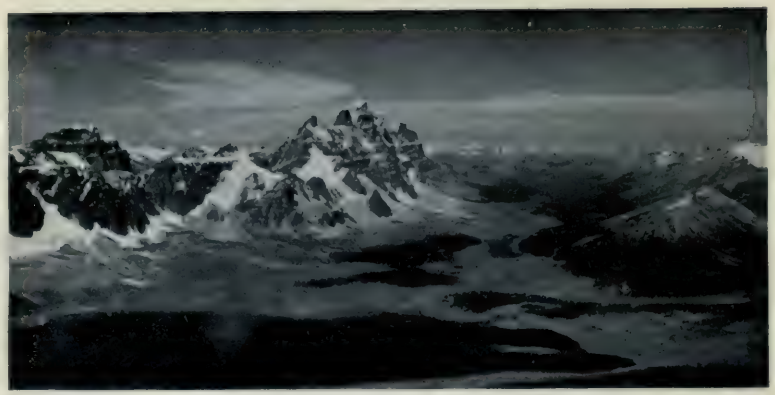
MISCELLANEOUS SECTION

JASPER PARK

By M. P. Bridgland

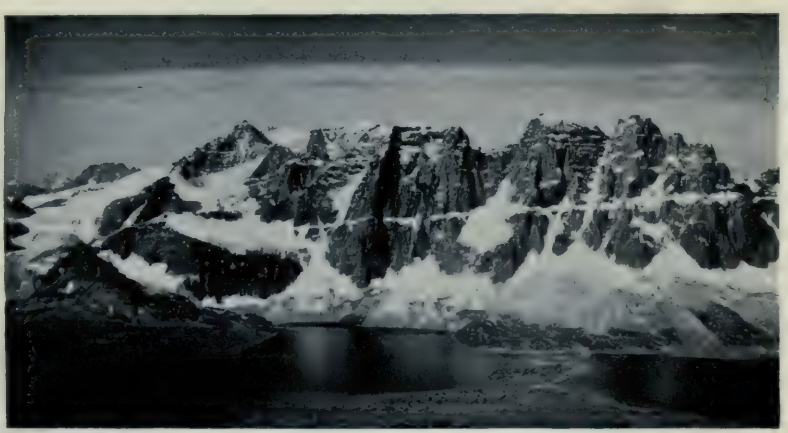
Jasper Park comprises an area of slightly over four thousand square miles and consists principally of that portion of the drainage basin of Athabaska River lying within the mountains. It was in 1907 that a small area was first set apart for public use, but in 1914 this was enlarged to its present dimensions. Prior to 1914 it was of little value to the public as its remoteness rendered it inaccessible to any save those few who could afford to engage a pack train and spend a prolonged holiday in the mountains, but the completion of the Grand Trunk Pacific and Canadian Northern Railways placed the park within easy reach of any travellers who might wish to visit it.

The valley of Athabaska River is one of the oldest known sections of the mountains. It was through this valley that David Thompson, one of the partners in the North West Company, travelled in the winter of 1810-11, enduring great hardships in his effort to discover a route to the Pacific Coast. Following in his footsteps came many other well known explorers and traders, among whom were Franchère, 1814; Ross Cox, 1817; Alexander Ross and Sir George Simpson, 1825; David Douglas, 1827; Père De Smet, 1846; Sir James Hector, 1859; and Milton and Cheadle in 1863. During 1871 and the next few years, the Athabaska Valley and the Yellowhead Pass were the scene of exploration surveys for a trans-continental railway, but in 1880 the proposed route



Photo, M. P. Bridgland *Continuation of picture below*

MT. GEIKIE, TONQUIN PASS AND TONQUIN VALLEY
From Mt. Clitheroe



Photo, M. P. Bridgland *Continuation of picture above*

THE RAMPARTS AND AMETHYST LAKES
From Mt. Clitheroe

through here was suddenly abandoned and a new one selected, passing through the Kicking Horse Pass, one hundred and fifty miles farther south.

Throughout the park the general direction of the Athabaska Valley is north and south. At the narrow gateway facing northward stand two high rocky peaks, Roche à Perdrix (7,000 ft.) on the east side and Boule Roche (7,230 ft.) on the west, rising abruptly above the timbered foothills. Above Pocahontas that square massive rock, Roche Miette (7,599 ft.), towers four thousand feet above the river while Roche Ronde (7,014 ft.) lies on the opposite side. While these peaks and many others in the vicinity do not offer any great difficulty, they are interesting climbs and present splendid views of Athabaska River and some of its tributaries. Further up the valley are a number of other peaks 8,000 to 8,500 ft. above sea-level, which may be reached from points along the railroad.

Among the most attractive features of the park are the many little lakes to be seen throughout. These are particularly numerous near the town of Jasper, along the Athabaska Valley and on the benches above. Seen from any of the peaks above, these lakes, with their various shades of green and blue, and their variety of settings, cannot fail to delight the observer. Among these lakes the ones most worthy of notice are Beauvert, Annette, Edith, Pyramid and Patricia. Many beautiful canyons and waterfalls may be found throughout the park, and, doubtless, many still unknown will yet be discovered. Among those already known, Punchbowl Falls, Ogre Canyon and the three canyons of Fiddle Creek, near Pocahontas, are worthy of notice; and about eleven miles from the same place, reached by a good trail, there are a number of fine hot sulphur springs, rivalling those of Banff. A little further up there is a very fine waterfall on the Snake Indian River, about fifteen miles from the railroad and on the opposite side of Athabaska River, the

canyon of the Rocky River. Maligne Canyon, near Jasper, is considered one of the finest canyons to be found any place in the mountains, while the Falls of the Athabaska, about thirty miles above, have excited the admiration of all travellers who have seen them.

To the mountaineer the first impressions of Jasper and vicinity may be a little disappointing. The valley at this point is wide and the mountains are not nearly so rough and rugged as those in some of the higher ranges. Still, beautiful views may be obtained from any of them and, as the bed of the river is only 3,400 feet above sea level, the climbs even to the lower peaks are not to be considered too lightly. Among the points most easy to reach are "The Whistlers" (8,085 ft.) and Signal Mt. (7,397 ft.), well built horse trails leading to the summit of both. Signal Mt. lies at the north end of the Maligne Range and, if two or more days are available, horses may be taken along the open slopes above timber line, thus coming within easy reach of several peaks near the north end of the range. Chief among these are Mt. Tekarra (8,818 ft.), Excelsior Mt. (9,100 ft.) and the Watchtower (9,157 ft.), the two last mentioned overlooking Medicine Lake and the Maligne Valley. Among other peaks which may be reached in one day from Jasper are Pyramid Mt. (9,076 ft.), Mt. Cairngorm (8,564 ft.) and Roche Bonhomme (8,185 ft.).

One of the most attractive expeditions from Jasper, either from a mountaineering standpoint or otherwise, is the trip to the Tonquin Valley and Amethyst Lakes. This trip requires at least four days and offers many inducements for a longer visit. Four miles above Jasper, an old Indian trail leaves the main trail up the Athabaska and turns in towards Whistlers Creek. Crossing the creek near the base of the mountains it climbs up steeply through the brulé on the west side, and entering the green timber above, winds on to the head of the valley. This trip requires about six hours from

Jasper. Good camp grounds and plenty of feed for horses may be found here, although the upper part of the valley is very rocky, forming ideal homes for the many whistlers from which it derives its name. From a camp here, Indian Ridge and The Whistlers on the north, and Marmot Mt. (8,557 ft.) on the south, may be easily reached in two hours. Manx Mt. (9,987 ft.) at the head of the valley, with its jagged ridges, glaciers and rockslides is more difficult and would probably offer an interesting climb, although from Circus Valley it may be reached by a long shale slope.

From the head of this valley, the trail leads over Marmot Pass, 7,500 feet above sea-level, and winds down brulé-covered slopes to Portal Creek, 1,500 feet below. Just above the junction of Portal and Circus Valleys stands Portal Peak (8,700 ft.), a rugged mass of black rock rising 2,800 feet above the valley while, on the opposite side, stands Lectern Peak (9,095 ft.). Three miles further up, near timber line, the valley widens out and offers splendid facilities for camping. This point may be reached by horses in eleven hours from Jasper, but is rather too long a trip for one day.

Of several mountains which may be reached from such a camp, the highest is Mt. Majestic (10,125 ft.), a snow capped mountain lying a short distance to the northwest. The peak overlooks Circus Valley, Crescent Valley, and also parts of Meadow Creek and the Tonquin Valley. On a fine day, that giant of the Rockies, Mt. Robson, may be seen far to the west, towering high above all others, its snowy summit glistening in the sunlight or more frequently lost in clouds, while to the north Roche Miette and other peaks along the entrance to the mountains may be readily identified. The mountain most easily reached is Mt. Maccarib (8,707 ft.) and, although not very high, it forms an excellent point from which to see the surrounding country and to form plans for future trips. The view from it is one of exceptional

beauty and cannot fail to please either the artist or the mountaineer. The higher point to the west overlooks the Tonquin Valley and Amethyst Lakes, and the head of Astoria River with its many glaciers, snowfields and lofty peaks. Chief among these is Mt. Geikie (10,854 ft.), lying almost due west, and the long escarpment above the lakes extending southwest along the divide between Alberta and British Columbia, one of the finest escarpments to be found in the mountains. At the head of Astoria River, Mt. Fraser (10,726 ft.) and Mr. Erebus (10,234 ft.) cannot fail to attract attention, both dark rock peaks rising above glistening snowfields. Nearby and to the southeast, above its precipitous rock walls, stands the sharp pinnacle of Oldhorn Mt. (9,779 ft), beyond on its right the black pointed summit of Mt. Blackhorn (9,800 ft.) and on its left the great massif of Mt. Edith Cavell (11,033 ft.), rising high above all nearby peaks.

At the head of Portal Valley there are two passes, Maccarib Pass on the west and Astoria Pass on the east. The latter leads to Astoria River opposite the mouth of a creek flowing from the west side of Mt. Edith Cavell. It is reported that horses may be taken over this pass and down to the river, and, if so, it is quite probable that they could be taken up the opposite valley to the broad grassy slopes above. It was from a camp in these meadows that the mountain was first climbed in 1915 by Prof. E. D. Holway and Dr. Gilmour. On the west side of the valley, Throne Mt. (10,144 ft.), Mt. Blackhorn and Mt. Chevron (9,300 ft.) would be within reach, and also Campus Pass and the lakes in the valley below.

On the west side, Maccarib Pass leads to the open valley of a small creek of the same name, tributary to Meadow Creek. Horses may be taken down the valley and around the shoulder of Mt. Clitheroe into Tonquin Valley without difficulty. This valley, with its beautifully coloured lakes, its wide meadows and park-

like forests, and its majestic peaks, is one of the most beautiful spots of the mountains. Near the south end of the valley a sheet of water, three miles long and a mile wide, divided into two parts by a rocky promontory, has been named Amethyst Lakes. On the east side of the lake, a strip of open spruce and balsam divides the meadows by the lake from the open grassy slopes above timber line, just below Mt. Clitheroe and Mt. Maccarib. On the west the valley is shut in by the rock-slides and steep moraines pushed down by the glaciers clinging to the massive cliffs of the escarpment extending south-easterly from Mt. Geikie. Along this escarpment the dominating peak is Mt. Geikie (10,854 ft), but other peaks worthy of mention are Barbican (9,000 ft.), Turret (9,700 ft.), Bastion (9,500 ft.), Redoubt (9,700 ft.) and Dungeon (9,700 ft.). Unless recently, none of these peaks have been climbed and from the side next to the valley they offer problems worthy of the most enthusiastic mountaineer.

Ideal camp grounds may be found in the open timber along the meadows at the south end of the lakes. This appears to be the most favourable location from which to attempt the ascent of Oldhorn Mt., the summit of which is only three miles distant. It is also conveniently situated with regard to some of the peaks at the head of Astoria Valley, although for these a camp in the valley itself, about 500 feet lower, would be preferable. Around Chrome Lake, near the head of the valley, there are wide open meadows and good camp grounds may be found in the open timber around them. A camp here would be the most convenient point from which to reach Mt. Fraser or Mt. Erebus, or to explore the Fraser or Eremite Glaciers. A number of other peaks could be reached from this camp.

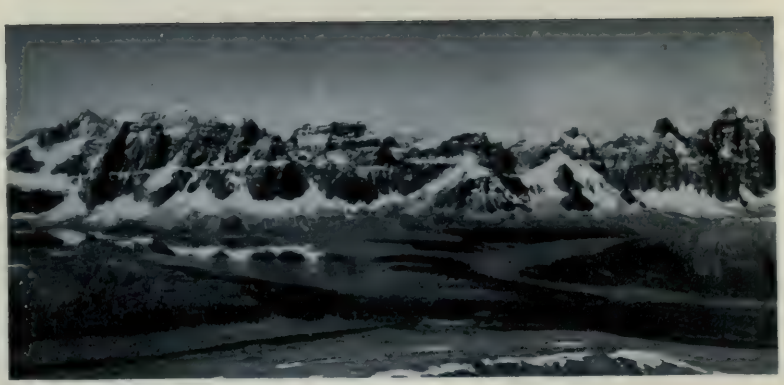
An attractive region of which little is yet known is that lying at the head of the south fork of Snaring River. Here open summits and wide meadows at the extreme

edge of timber line give easy access to several fine snow-capped mountains, which rise to an elevation of about 9,500 fet above sea-level. Chief among these are Monarch Mt. (9,500 feet), Mt. Consort (9,460 ft.) and Diadem Peak (9,615 ft). The lower part of the valley and also that of the main stream below the forks is very narrow and heavily timbered along the lower slopes. Huge rock buttresses projecting from the mountains above overhang the valley in a most imposing manner and small lakes nestle in the cirques thus formed. In the basins below Mt. Henry and Mt. Cairngorm, which drain into the south fork through narrow gaps between rugged mountains, there are several small lakes.

Access to this region is rather difficult, either from the valley of Miette River on the south, or by way of Snaring River. Above the railroad, Elysium Pass, an open grassy pass between Emigrant Mt. and Mt. Elysium, is passable for horses, but the long stretches of rolling brulé-covered benches above the railroad are almost impassable. On the other side it is hard to say what obstructions might be encountered in an attempt to enter by way of Snaring River. Some day, no doubt, a trail will be constructed leading from Jasper, past some of the many lakes on the benches above, to Elysium Pass and then down the stream to the mouth of Snaring River and back to Jasper. When this is done, the trip will be one of the most attractive in the vicinity, but at present the region awaits exploration.

Among other sections in the park that are well worthy of special mention are the Maligne Lake district and that at the headwaters of the Athabaska and Whirlpool Rivers. Articles dealing with these are to be found in many of the books descriptive of the mountains. Mrs. Chas. Schaffer in "Old Indian Trails" gives a description of Maligne Lake and the surrounding mountains,* while

*See also Canadian Alpine Journal, Vol. IV., 1912



Photo, M. P. Bridgland

TONQUIN VALLEY AND AMETHYST LAKES
From Mt. Majestic

Photo, M. P. Bridgland

BEAUVERT LAKE, NEAR JASPER

articles dealing with not only the Athabaska and Whirlpool Valleys but also with the Yellowhead Pass are contained in Professor A. P. Coleman's book, "The Canadian Rockies," and in Mr. Stanly Washburn's, entitled "Trails, Trappers and Tenderfeet."*

All game throughout the park is protected and is consequently very tame, so that excellent opportunities are afforded for observing wild animals in their native haunts. Rocky mountain sheep are numerous and often allow the traveller to approach within a few yards. Deer and beaver may be seen frequently in the main valleys, and in the more remote parts, caribou and mountain goats. Fish are abundant in many of the lakes and some of the tributaries of Athabaska River.

*See also Canadian Alpine Journal, Vol. IV., 1912.

THE BYWAYS OF BANFF

By Mary S. Warren

Where, O where is one to begin on such a subject when the writer knows nearly every crack and cranny within ten miles of that beautiful spot and loves them all? One must wander in a sea of general information trusting to the patience of the reader, hoping thus to impart a little enthusiasm here and there.

The end of June brings the first of the sterotyped tourists to Banff, where he and his prototypes remain till exactly the middle of September, when they all depart as they came—smug and self-satisfied over their meagre achievements.

To those who really *know* Banff there is a sense of pity for these butterflies of travel. They have flown so far and have scarce rested themselves before they are on the wing again, taking with them the barest knowledge of one of the fairest recreation grounds of the world. They come with the idea that there is but one hotel in the region to receive them and that its doors will bang on their heels or they be locked in a frozen land unless they scurry away while the sunshafts are still warm. They go with such an aggravating air of complacency, and all because they have obtained their information from hundreds of miles away. If one, who has faced all the "rigors" with which our tourist is primed, undertakes to enlighten him, he receives but a knowing smile and it always seems wisest to let him pass on with his far-gained knowledge of the suroundings he is leaving.

Now that he cannot "talk back" or look superciliously into the eyes of his would-be informant, let us correct a

few of these notions which have endured since Banff was Banff.

First, there are several hostelries within our environment, some of which remain open all winter. Second, if you want to see the wild flowers at their festal gathering, do not wait until the end of June for you mill miss some of the choicest blossoms of the forest and meadow: the little androsace, the purple-pink wind flower, the shy little orchid (calypso), which hides always in the deep thick moss beneath the pines, and, to a trained botanist, many a rare flower which is gone if he hies himself to Banff by the aforesaid schedule.

Usually about the end of August there is a snowstorm, a great feathery blanket which strikes terror to the heart of the uninitiated but which flees before the first rays of the sun; and we, who know the climate, know it to be a forerunner of days of brightness with crisp, cool nights. Another snow and off goes the well-posted (?) traveller—to him winter has come. We watch him depart knowing full well the weeks and weeks of bright autumn days to follow—the very cream of all the year—but he listens not to those who have tested the vagaries of old Banff. He only hears the voices miles and miles away of those who have never smelled the camp-fire smoke on a frosty morning or sniffed the odours of the dying poplars. "It is time to move on for winter is coming." So he "moves." The golfing goes on into late October, the riding is finer than ever, the roads better for motoring than all summer—no flies, no mosquitoes. The trails are gay with brilliant autumn colours, the deer wander down from the distant hills, the wild sheep come from the silent valleys far away and can be seen within a short distance of the village, counted not in tens and twenties, but by the hundred. Their favorite haunts are along the government road leading toward Lake Louise, thirty-eight miles to the west. By this time the large percentage of tourists

has gone; but the few brave spirits who remain, first stare aghast and then gasp: "Why have we not known what we would be missing by leaving so soon?"

Though Banff is ideal for the summer months, it is the long, long autumn bringing the wild animals to our doors and the short, brilliant spring which bounds from snowbanks into flowers and soft winds, which so few who come among us, can comprehend. They who were instrumental in building the home of the Alpine Club of Canada in Banff, knew the possibilities and that they were building for the future, not the mere present.

The Club House dominates the wonderful valleys of the Spray and Bow Rivers, the quiet homes in the village below, and makes access easy to so many places where walking carries you farthest, where ponies are next in usefulness, where even a motor car may now be called upon in case walking and ponies are impossible.

The incoming stranger has often been heard to say: "I think I can do Banff in three days." He counts upon one little climb, one pony trip and one motor drive, and he can just about "do" it in that time. But he has not seen Banff. He has a whole summer's enjoyment ahead if, perchance, someone who loves Banff, and who knows her hidden secrets, takes him in hand.

Sulphur Mountain stands forth as a good educator for the beginner. On this mountain and passing the various sulphur springs, he gets his first glimpse of the mossy mountain slopes and the first spring flowers. He leaves the attractive Club House behind him and with mountains and rivers all about him, saunters slowly to the Upper Hot Springs. From there, by easy stages, he soon climbs to the summit of the mountain and the Government Observatory. From thence he gazes to every point of the compass, with its endless roll of snow-capped peaks, and he wonders: "Which shall I choose for my next climb?" Well may he ask the question for it is an army of hills, which rise all about him, and he

starts the descent with a bewildered sense of the immensity of it all. But passing the Hot Springs, he has a plunge in the hot waters which rests body and mind and leaves him feeling he can attack any proposition. On his walk he has seen roads branching here and there, fascinating and almost obliterated trails, which he would like to follow to their source, and, if he has already breathed of the spirit of the hills, these trails will call him.

Let me hint that he stand by Sulphur Mountain yet another day, and with muscles slowly training, he may then take a light pack (a little food and a blanket) and, following the well-known Spray River road, he saunters along hour by hour over an old tote-road—to his right rears the comb of Sulphur Mountain, to his left the long, serrated Mount Rundle. Flowers are all about him; sometimes the trail hangs above the river, sometimes he walks besides its gurgling waters, sometimes he may look aloft at Rundle and, if sharp of eye, see the wild goat slowly browsing over most impossible places with most impossible nonchalance. If muscles are still untrained the hour comes when he casts loose his pack, finds a mossy rest, lights his fire, dines with a ravenous appetite in such a banquet hall as even kings have never owned; the sleep which follows is certainly not vouchsafed to many kings of to-day. As the sun rises the next morning and he hears the birds and waters calling, he brews his cup of tea, fries his bacon, carefully extinguishes his little camp-fire and is off again on exploration bent. O, be careful, ye who send forth the newcomer to our hills! Warn him beyond all else that one match, one neglected camp-fire destroys what no human hand can build.

Perhaps by this time he has reached an old deserted lumber camp (about seven miles from Banff) where it will pay him to turn to the right for half an hour, climb a few steep benches when he will be rewarded by the

sight of a very fine gorge through which the Spray River fights its way to a more open passage. At the lumber camp he crosses an old bridge which leads toward White Man Pass. About eight miles further he reaches an open draw on his left and three miles down the slopes before him lies the mining town of Canmore. Do not mistake this draw for White Man Pass, which is many miles farther to the southwest. Reaching Canmore, he has now had a tramp of eighteen miles and the westbound train in the evening which takes him back to Banff, is a welcome sight.

For the next day let him try some walk which is not too strenuous—say a walk to Healy Creek. To be sure Healy Creek is only the door to Wide Adventure but just to stroll up there is "temptating," as the child said, and he gains some original ideas for future desires. With a lunch in his pocket he starts up the Cave and Basin road, passes a bathing pool where the Government has placed very fine bath houses, follows the road toward Sundance canyon and turns to the right where a kindly guide-post bids him enter upon an almost undistinguishable trail. Once upon it, where the pine trees lock their boughs above his head, he is now in the spaces of solitude and freedom. Only a scurrying rabbit, a shy chipmunk, a timid deer will he see; but the trail is good, easy, comparatively level and he has another perfect day in the hills. At Healy Creek he gazes ahead and wonders what possibilities lie behind the encircling hills. And what are they? Weeks and weeks of trailing. He may go over the Simpson Pass down to Mount Assiniboine, back by the way of Spray Lakes, then down the Spray River to Banff, a distance of seventy-six miles; or he may cross from Simpson Pass (6,914 ft.) to the Vermilion summit, go due north to Castle Mountain, standing guard over the now-familiar Bow River, thence down the motor road on the river's left or take a trail on the south side of the river to Banff. This trip is approxi-

mately sixty-two miles. One must perforce take a horse on these two trips to carry tent, bedding and food, but if walking is desired it is perfectly feasible as the trails are all in good condition.

A fairly easy trip which does not necessitate a pack-horse is to take a motor-car to Lake Minnewanka. A mile and a half from Banff the elk pasture is seen, well stocked with fine specimens, then the mining town of Bankhead is passed and our traveller reaches the outlet of Lake Minnewanka after a nine mile drive. Here will be found a comfortable chalet and, should the fishing tempt him, he may tarry for days in comfort, climb Mount Aylmer (10,335 ft.) and many another lower peak if the whim takes him.

Two ways present themselves for the homeward journey: either take the old Indian trail round the north side of the lake and come south via Carrot Creek to the main highway to Calgary, a distance of twelve miles, and walk ten miles into Banff on the regular motor road, or go by the little boat which plies the lake every afternoon and be left off at a landing opposite a draw in the hills over which you pass; then follow the creek and the motor-road as mentioned previously.

I nearly forgot to mention a most delightful walking trip for our mountaineer while he is still hovering round Vermilion summit. Instead of going due north to Castle mountain as previously described, he may turn his face westward, drop down to Boom Lake, go on to Consolation Lakes and Moraine Lake and walk into Lake Louise over a perfect driving road. Here he will find a fine hotel, a genial welcome, and—a bath-tub. For days and days he may dally at Louise but if Banff still claims him, he takes the tram or his own two legs three miles to the station and is back at Banff after a thirty-eight mile run over the steel rails.

As for mountains to ascend, if such be our tourist's taste, where may one draw the line? There are weeks

ahead of him for that. Mount Aylmer, previously mentioned as near Lake Minnewanka, is the highest peak in the vicinity of Banff, while close to the village itself is Mount Rundle (with a horse trail part way up it), Cascade Mt., Mt. Edith and back of each and all, and trending west, are mountains everywhere.

To really go into the science of climbing, to describe those beautiful (?) spots where one clings by a toe or a finger to this earthly sphere, seems not wise for one who has no experience in that direction to enlarge upon. I have listened by the hour to enthusiasts holding forth on the charms of ascending Cascade Mountain on its south face (when it's a hundred per cent. easier to go round to the west and north sides) and that Mount Norquay, just beyond the Stony Squaw, presents most excellent opportunities to study real climbing. I prefer to pass over the subject gently owing both to ignorance and lack of enthusiasm along that line. Anyone who wants such information may obtain it at first hand and with far better understanding from the Alpine Club direct. I stand aside and wish him "Good luck."

There are plenty who come among us to whom all this is very like hard work and they say: "But I cannot do that," or "I despise climbing." Can you then sit one of our mountain ponies and trust him? It all depends on the trusting. He is not bothering his head about *your* neck of course, but his own, and I have never seen a pony bred to the trail that could not be trusted. He can cling to the merest foothold with absolute calm and it is the rider's fault if he does not do his job well. He can carry a baby to the summit of Sulphur Mountain and bring it back safely. It is a beautiful horse trail, though I have heard its dangers expounded many a time. The trail up Rundle is equally harmless and easy. You may take a horse and a lunch and spend hours at the top of Tunnel Mountain searching for flowers, while your pony nibbles the succulent grasses; look off into the

valley of the Spray and at Goat Mountain beyond; gaze down, down into the Bow Valley where the golfers faithfully trudge back and forth across the links like so many busy ants. It is a splendid view all around and an easy trip.

Then we come to those to whom even a mountain pony seems a great fatigue, so here, too, we have that world-wide remedy—the ever-present Ford. We may smile all we like at the jokes on that little car, but it is as useful in these mountain districts as the native pony. Cars, heavy and light, may be had at any time and trips are plentiful. Personally, I consider the highway from Calgary to Banff gives to the new-comer the best conception of the whole region that can be had.

On the season depends the trip. In a good touring car and under average conditions, the run may be made in a little over three hours. But here, again, I suggest the thermos bottle and a few sandwiches or a kettle to boil tea by the wayside. It is such a land of picnics and one misses so much by tearing madly through *any* section. If the day be bright the traveller sees a line of tempting snow-capped peaks from the moment he leaves Calgary. The first twenty miles pass through a rich ranching country with stock in every direction, while he follows along a white line of road, topping one hill after another till, reaching the highest of all, the little hamlet of Cochrane appears nestling in the deep valley below. In the meantime the mountains seem to be slipping closer and are fascinatingly blue in the haze of atmosphere. Wind-flowers and buttercups nod in the ceaselessly blowing wind and the tawny little gophers sit upright in every direction till they think the last moment of safety has arrived, then duck with a shrill squeak and wiggling tails into their holes.

The car slides down the long hill into Cochrane, slips past the primitive stores and post office and is off again, up hill and down dale with the mountains ever nearer.

Always one specially marked peak stands forth, bleak, bare and sullen against the blue sky—The Devils' Head (9,175 ft.).

The Indian reserve, set aside for the Stoney Indians, is traversed from east to west. One still sees there the abandoned homes of the first missionaries and an old Indian orphanage on the north side going to decay; a mile distant on the south side are the Government buildings—school, church, the home of the Indian agent, etc., and beyond that group of buildings the very small railroad station of Morley. One usually passes a few Indians jogging along on horse-back (no cars as yet for them) and perchance a wood-chopper's tepee in the far distance with children and dogs playing about it. There are any number of places to stop for a rest and to demolish the lunch carried from Calgary, though Ghost River or old Bowfort Creek are the two favorite spots, both beautifully situated.

At the west end of the Indian reserve the Boundary of the Rocky Mountains Park is crossed. The road becomes smooth and gravelly, the mountains close sharply in; the Devil's Head, which has been watched so many miles, is lost behind the nearer hills and is not again visible. You pass quickly through the Gap, Exshaw (the cement centre), Canmore (the mining town), Anthracite, a town in name only, for the mine there is worked out and only dandelions flourish where once were many homes. Then winding, turning and twisting up Anthracite hill, topping the last rise, a glorious comprehensive view of the country about Banff lies before you. It is really the true introduction to the first play-ground of the Rockies. A three-mile run down to the valley below and you are back at Banff, tired, of course, cold if it has been a sharp day, but very satisfied with the memory-pictures which will come to you long after, when little Banff is hundreds of miles away.

Lake Minnewanka may be reached by motor-car and, on your way there, a side-trip made to the haunts of the wild animals in the park which the government has set aside for them. You may watch the buffalo lazily chewing their cud in the warm sunshine, the goat scrambling over the roof of a tiny chalet of their own, the moose almost hidden in the thick-grown poplars and the stately elk sauntering haughtily and nonchalantly in their wide preserve. A flock of wild mountain sheep are hidden back in the hills behind the buffalo pasture but may be seen by taking a short walk if you are accompanied by the caretaker of the animals.

Then for the last motor drive and to keep for all time a beautiful memory of Banff, start westward on the (as yet) uncompleted motor-road which will eventually link Alberta with British Columbia. If the time of year is early spring or late August you will almost surely encounter some of the many flocks of wild sheep which abound on the northern hillsides. In the spring the ewes come with the young lambs, in the fall the rams join the family group and they are all most accommodating (if you slip up on them quietly), standing at attention while the camera is adjusted and a good photograph taken.

Occasionally a deer hears the car coming, pauses a moment, then bounds into the shelter of the thick, low willows; a coyote sneaks across the road; and, if you are specially fortunate, you may have the good luck to see a bear go lumbering up the mountain side, disturbed while out foraging for a meal of berries or rodents. The laws of the National Parks protect these animals of the hills which makes their shyness seem assumed rather than real.

Perhaps one of the most appealing parts of the entire drive is traversing the Hillsdale hills. What a wonderful little park it must have been before it was touched by the hand of civilization. It is a succession of low, grass-covered hills surrounded by high peaks. It is an ideal

home for game and at every turn and bend of the road one looks for a grim old castle to dominate so superb an estate. But castles have not been built in this new-old land; only the deer follow our passing with affrighted eyes, the winds sigh in the lonely tree-tops and sway the wayside flowers, and we go on leaving all that splendour to be awakened in the years to come.

Johnson Creek crosses the road two miles west of the garden land just mentioned. Its banks are an ideal spot beside which to rest and have lunch or tea, while a pleasant stroll of three-quarters of a mile up its canyon well repays the slight effort. A good trail and stout bridges back and forth across the stream afford splendid opportunities for photographing a most artistic canyon.

Six miles beyond Johnson Creek we come to Castle Mountain; its great, grim towers frown down on a wide sunny valley whose *human* glory is long departed. In the early eighties there was a rush hither of miners on the report that silver, lead and copper were hidden there in the bleak mountain. But the ore was not to be found in paying quantities. The excavations in the sides of that gray old giant may still be seen, but the little shacks are fallen to decay and save for one ancient miner who has lived there practically alone all the years since, and a small railroad station beyond, there is nothing to recall the once busy, noisy, mining village under the shadow of this mighty monolith.

From here the motor road still winds its beautiful way west about ten miles. Some day a branch line from it will reach Lake Louise, only ten miles beyond the present terminus; some day the main highway over Vermilion Pass will be connected with the British Columbia roads; but all such plans were perforce stopped during the world war.

In the above very inadequate sketch, I have endeavoured to show some of the many attractions for those who love Nature in her wildest mood;

attractions that may be found at this beautiful mountain spot and in its vicinity during the spring, summer and autumn.

There still, however, remains one that demands attention—the Bow River. Born at the very backbone of Canada from the heart of a great, glistening field of ice sixty-five miles from Banff, and fed by reserves from two beautiful turquoise blue lakes, the Bow comes racing down a broad valley, winding between snow-crowned mountain masses and bordered by forests of pine. It is a swift flowing stream with numerous waterways and picturesque islands, and in its wild race down the mountain part of its course foaming rapids are seen at almost every bend.

Eight miles from Banff the river rests for a spell and presents an easy going course until Banff is reached, when, with a wild leap over the Bow Falls, just below the village bridge, the race is begun again with renewed energy, and so continues to the Gap that forms the eastern entrance through the bold escarpment of the Rockies.

All who come to Banff stand on the bridge at the head of the Main Street of the village and, gazing westward, see a jumble of red roofed, white boarded buildings showing brightly against a background of green forest and the snowy heights of the Massive Range in the far distance.

The boat house and its genial proprietor do much to make a visit to Banff enjoyable. Row boats, canoes and motor skiff ply in the blue-green waters of the river throughout the bright sunny days. In addition, the boathouse proprietor runs a motor-launch up and down this smooth way at intervals daily.

Those who wish to see the mountain beauties at their best are well advised to take a boat or canoe, or a seat in the launch, and make the trip to the end of the quiet reach; then, drifting homeward with the current, all the

glories of the surroundings may be absorbed with supreme relish and satisfaction and the infinite beauty of the Great Hills makes lasting impressions upon the pages of memory's scrapbook.

For the row boat and canoe there are other paths of enjoyment: Echo River and Shadow Creek, the latter leading to Vermilion Lakes, are tributary to Bow River and very pleasant hours may be spent wandering over their surfaces, not forgetting the lunch basket and camp fire kettle, and even the fishing rod may be taken along.

For more strenuous work a canoe may be shipped by rail to Castle Station on the Canadian Pacific Railway, or even to Lake Louise Station, and a run made from either point to Banff; then swift water, rapids and falls are the order of the day. When the river is at high stage the trip may be made in a day, but at normal stage it requires two or more and camp accessories should not be forgotten. In the opposite direction, a canoe may be taken below the Bow Falls and a run made to Exshaw or even to Calgary, eighty miles distant, a most exciting trip for a canoeist.

Apart from the keen excitement of the race down the swift flowing stream, the nightly camps amid the pines are blissful in the extreme, as one lazes around the camp fire and watches the after glow upon the summit of the snow-topped peaks, in colours of bright red, pink and salmon, and finally the grey shadowy massifs rising ghost like into the star lit dome of the heavens. This truly is heaven on earth and is as near paradise as one can hope to attain in an every day existence.

In all these pages I have mentioned only the *summer* days at Banff; they are all that the majority of people seem to know. But as our vast country is developing, so are we developing certain habits. In the winter there is a constant outpouring of Canadians to escape the rigors of the northern climate. I specially refer to those living in the prairie districts. The high

winds, the bitter cold send them scurrying to the Pacific coast. They pass by our winter wonderland not one in ten knowing of its existence. A Californian wrote a year ago that southern California's population in winter was about half Canadian. I do not blame a resident of those bleak, wind-swept cities and towns for seeking a haven of warmth and sunshine, but I wonder he has not tarried awhile in one of the finest places of his own country and thus been able to tell the Californians where they too may find a change. It seems so human to desire a change, and some day the western coast will waken to the existence of our St. Moritz of Canada.

The atmosphere is dry and invigorating, the high winds of the prairies pass us by, it is very easy to keep warm in Banff. Skating begins in November and lasts about four months. Ice boating can be had on Lake Minnewanka. Sleighing usually begins in December and lasts till the end of March. The toboggan slide is always to hand and bathing in the hot sulphur pools under the open sky, a delightful and novel experience, while ski-ing and snow-shoeing may be added to the long list of pleasant things to do.

Taking all things into consideration, for anyone who loves the out-of-door life, Banff has no season when it is ever dull.

Little Banff, you are very fair, either in your winter robes or your summer draperies, and if I have interpreted you to even a favoured few then I have fulfilled a pleasant duty.

SELWYN CREEK

By C. G. Wates

The Valley

Among the mountains of the Great Divide,
Where flows the mighty Fraser to the sea,
A valley lies, in which I love to be;
Great buttresses rise up on either side
On which, by might of rock and root allied
Courageous fir trees cling and stand erect,
Sweeping from azure sky, with cloud wisps flecked,
Down to an earth-bound streamlet, heaven supplied.
A crystal streamlet from the eternal heights,
Torrents of diamonds, pearls and opals blent,
Flinging a sheaf of rainbow-coloured lights,
Rippling through moss with ferns and flowers besprent;
While here and there a sky-reflecting pool
Lies like a perfect sapphire, clear and cool.

The Tree-line

The way above the cataract is won,
Above the turmoil and the roar and rush,
Into a little valley, filled with hush,
A little hanging valley in the sun.
Meandering streams, like liquid air, which run
'Twixt mossy banks, to thirsty lips appeal,
Among these shadowy vistas Man may feel
That Man and God and Nature are at one.
The clustering larch and spruce trees have to face
A struggle for existence, which imparts
A gallant sturdiness and homely grace
That makes them very kin to human hearts;
And one might find among these glades and streams,
"Adventures in contentment" and dear dreams.

The Rocks

Above the region of the forest dense,
Where voice of murmuring stream has died away,
By giant hands, in some far bygone day,
Was carved an amphitheatre immense.
Nature seems waiting breathless, in suspense
The whistle of a marmot, shrill and clear,
A friendly ptarmigan that flutters near,
Serve but to make the silence more intense.
The Mountain Trolls at night make grim pretence
Of some wild drama on the valley's edge,
Surrounded by a ghostly audience,
Crouching on bastion, parapet and ledge,
And yonder shattered Gendarme forms a throne
Where Silence, Silence, Silence reigns alone.

The Summit

Men held the devil-haunted hills in fear
Till to their loftiest summit Satan sped,
Bearing the Son of Man and tempting said:
"Behold and worship me, whom all revere,
Then take Thy kingdom!" Christ made answer clear:
"Get thee behind me, Satan; thou hast read,
God only shalt thou worship." Satan fled,
And ministering angels hovered near.
Now kinship with the hills hast cast out hate;
Men love the struggle with the rocks, the strife
With cliff and chimney, cornice and arête,
Finding therein the epitome of life,
And on the summit, felt although unseen,
The uplifted spirit of the Nazarene.

IN MEMORIAM

FRANK W. FREEBORN

Old members of the Alpine Club of Canada will regret to learn of the death of Frank W. Freeborn, which occurred on June 21st, 1919, at his birthplace, Warren, Rhode Island. Mr. Freeborn was a charter member of the Club, never missing a Camp until 1914, when he was stricken with partial paralysis at Field on his way to the Camp in the Upper Yoho Valley.

Mr. Freeborn was educated at Brown University, graduating at twenty-two and travelling later in Europe, Palestine and Egypt. Thereafter he taught Latin and French in various American High Schools, being twenty years in Boston and somewhat longer in Brooklyn, N.Y. His chief subject was Latin, although he published a translation from Daudet for the use of his own students, a book still published and which brought him a letter of appreciation from the author. At intervals of four or five years he would return to Europe to spend his holidays in the Alps, but after his first visit to the Rockies, every summer was spent in the Canadian mountains.

It was during this first visit in 1905 that Mr. Freeborn and Mr. S. H. Mitchell, our Secretary-Treasurer, met at Glacier House. Both men loved the Swiss Alps, both were enchanted with these Alps of the New World, and when the Alpine Club of Canada was organized the next year, Mr. Mitchell put his new friend up for membership. Mr. Freeborn was then near the end of the fifties when even the hardiest mountaineer's most vigorous days are over, but he climbed, tramped, and photographed in the Rockies every year thereafter until the fatal stroke which made an end of all such holidaying. He had spent the day on Mt. Field with his camera, that camera which produced for mountain friends so many photographs, keeping the pictorial record of his yearly expeditions and of interesting activities in the Camps. More than once in the weary years which have intervened, Mr. Freeborn has said to Dr. Stone, his companion on happy expeditions, that he had hoped the end might come in his beloved mountains. Like his compatriot, John Muir, he had preferred death on some "noble mountain or in the heart of a glacier, to disease or some shabby lowland accident."

Mr. Freeborn's last active season was at Cathedral and Robson Camps in 1913. He climbed Mt. Mumm from Robson Pass, and made several excursions from the Camp, spending one whole day on Robson Glacier with Dr. Stone. At sixty-six he had joy in these easier expeditions, but it was joy with that element of wistfulness which comes to the enthusiast when his best days are gone, when he is fain once more to drink delight of battle with his peers amid the high snows and the steep precipices. He had climbed such difficult mountains as Sir Donald and had made such tiresome ascents as Mt. Temple; and no season between his first and last Camp but gave him several expeditions of interest. And the leisure hours of winter

F. W. FREEBORN

in New York, after the day's work with his boys, were spent in arranging his photographs, poring over maps and laying plans for the next summer's climbing and tramping. He was a great walker always, belonging to a walking club which took its weekly tramps in all weathers. He knew every trail in the Adirondacks and wrote a series of papers on them for "Appalachia." He was a member of the American Alpine and Appalachian Clubs.

Dr. Stone speaks for many another when he says that he has always felt grateful to Mr. Freeborn for introducing him to the mountains. "He was our most consistent and enthusiastic exponent of the gospel of mountaineering and of the open air." He was, indeed, to many a spiritual father in that gospel, a choice spirit, a good comrade on the mountain or in the valley. His was a transparent soul and an honest, incapable of the most harmless equivocation. He was not an expert craftsman, but he was a cautious one on rock or ice or snow; and he was a devoted and happy mountaineer such a every young climber might well wish to be. He belonged to the inner circle. He loved to linger on the summit. To him also, as to Guido Rey, that eminent devotee: "It was good to rest on the summit and to dream amongst the clouds for a few short moments of life." He leaves with us a fair and fragrant memory. Those who kept in touch with him during the years of his incurable malady are grateful that he lived to see his nation enter the war over which his heart was well nigh broken.

ELIZABETH PARKER.

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In 1906 I made my first journey to the northwest, visiting the mountain resorts on the C.P.R. after the fashion of the average tourist. On August 2nd, arriving at Glacier, I at once walked up to the Glacier, and from a large rock planned to take a photograph of the scene. I found there a kindly gentleman who engaged in conversation and with great interest began to point out to me and explain the surroundings. We walked back to the hotel together and presently had arranged a trip up Mt. Abbott for the following morning. This was my first meeting with Freeborn. Although I was a stranger and "tenderfoot," he made an unusual effort to assist me in knowing and loving the mountains. To our accidental meeting I owe my introduction to Alpine pleasures. We were together for two or three days, during which he conducted me up the beautiful Asulkan trail. On parting he gave me minute directions for visiting Lake O'Hara, which I did alone in an all-day tramp up and back from Hector station.

The acquaintance thus begun was kept up by correspondence, but it was not until 1911 that I was again able to go to the Canadian mountains, where I met Freeborn by appointment at the Club House early in July. We spent a few days about Banff and then went to Lake Louise for more ambitious undertakings. On July 11th we made an attempt on Lefroy accompanied by Edouard Feuz and Rudolph Aemmer, but were driven back from near the head of Abbot Pass by a freezing snow storm. We climbed the lesser peaks in the neighbourhood; made a three-day camping trip to Moraine Lake, Larch Valley, over Sentinel Pass to Paradise Valley and back to Lake Louise over Mitre Pass, I climbing Temple on the way. Then a second attempt on Lefroy on July 17th was successful, it being the first ascent of that year. I was proud to have Freeborn's approval

of my behaviour on that occasion. We then went on to Field, whence Freeborn set out on a camping trip to the Yoho and I, after climbing Stephen, went on to Glacier and to Oregon. In 1912 we were back again planning to join Freeborn in a camping trip to Larch Valley with others, but for some reason this was not carried out, his friends failing to arrive at the last moment. Instead, Mrs. Stone and I spent some days climbing at Glacier and then joined the Annual Club Camp at Vermilion Pass, where Freeborn was present and we were much together.

In 1913 we met again at the Cathedral Camp, going together on numerous jaunts. Freeborn did not attempt any of the more arduous climbs freely acknowledging the advance of years, but he was the same companionable and helpful comrade, and one of the prominent figures of the Camp.

We went together to the Robson Camp that same year, covering the trail in and out side by side, he expressly wishing me to accompany him. During the Robson Camp we climbed Mt. Mumm together, this being, I think, his most ambitious undertaking, but we made several excursions together, including one whole day on the Robson Glacier. 1914 saw the end of poor Freeborn's mountaineering. With his friend Raiman going for a day on Mt. Field in search of photographs, he was stricken with partial paralysis. When we arrived at Field, en route for the Club Camp in the Little Yoho, we found him prostrate at the hotel. It was apparent that his climbing days were over, but we hoped for some recovery. This never came. I saw him several times in succeeding years, once at his home in Collingswood. He lived in the memories of his mountain days, but burdened with anxieties. He spent much time in arranging his abundant photographic material. He referred more than once to his desire that the end might have come in his beloved mountains.

During all these years we exchanged frequent letters, and, after a summer's campaign, I always sent for his examination my photographic collection. During the last winter I sent, on his request, my entire collection of mountain negatives from many of which he made prints. The day before his death he wrote me a long letter wishing to Mrs. Stone and myself a pleasant vacation in his mountains.

I have always felt a deep obligation to Freeborn for his having introduced me to the mountains. What he did for me, he did for many others. He was our most consistent and enthusiastic exponent of the gospel of outdoor life and particularly mountaineering. His death to me is a personal loss. I shall never see the mountains again, which were so beloved by him, without recalling his kindly face and his keen enjoyment of them.

W. E. Stone.

* * * *

I feel that I should like to add a few words to the above tributes to Mr. Frank W. Freeborn.

Mrs. H. J. Parker and Dr. W. E. Stone have expressed my feelings towards Mr. Freeborn very fully—a man, a mountaineer, a boon companion and a loyal comrade.

I never had the privilege of climbing with Mr. Freeborn, but I have known him well since he joined the Alpine Club of Canada as an original member in 1906, subsequently becoming a life member,

and have had much correspondence with him throughout the thirteen years of his membership. I knew him best as an ardent supporter of our Annual Camps, which he yearly attended, as the Dean of the American Corps, until incapacitated in 1914. Since then his connection with the Executive of the Club has been a close one and he always displayed deep interest and loyalty, his good judgment and helpfulness being very valuable to us. This is well known to the American Section of the Club.

Around the great camp fire at nights, after the day's mountaineering activities were over, he was a leading spirit and the memory of his trim, business-like poise, as he recited some specially prepared poem or suitable essay for the occasion will always be with us—the firelight flickering on his genial, smiling countenance with all about the silent snow-crowned peaks, the glistening icefalls and shadowy, mystic forests. I think of him thus at our 1909 Camp at Lake O'Hara, when our visitors from the Alpine Club (England) were with us for the first time, and again, below the mighty, towering heights of Mt. Robson in 1913.

Dear old Freeborn! His last ascent has been made—let us hope the highest of all his conquests—but the present generation of the Alpine Club of Canada will have passed long before his memory is forgotten.

ARTHUR O. WHEELER.

WILLIAM SPOTSWOOD GREEN, C.B.

The Rev. William Spotswood Green, that witty Irishman and good explorer of mountain regions, has passed from our membership. In 1901 and 1902 I officially mapped the region covered by his explorations at the summit of the Selkirk Range in 1888. His map of that region, the first published, is excellent and later surveys showed him to be reliable and accurate in his geographical results.

The Selkirk Range in the vicinity of the Canadian Pacific Railway was my first love and I have not yet, in eighteen years of surveys and exploration in the Canadian Rockies, found any reason to change my allegiance. Before commencing I read Green's "Among the Selkirk Glaciers," and I confess it set me on edge to enjoy some of the experiences and delights there recapitulated, and my expectations were in no measure disappointed.

The book itself is the classic of the Selkirks. The abounding humour of anecdote and keen human interest it holds carry you along with intense interest, while thrilled by his scenic descriptions and readily understanding the simple related forms of his scientific observations. The story and his map work made me much desire to meet the writer, which I had the pleasure of doing at the jubilee dinner of the Alpine Club (England), held at Lincoln's Inn hall in London in 1907. I was surprised to meet a man of melancholy cast of countenance, which was instantly belied by the exceptionally humorous and fetching twinkle of his eyes.

W. S. Green was the first to record measurements of the Illecillewaet Glacier for advance or retreat.

ARTHUR O. WHEELER.

Mr. Green was born in 1847, ordained in 1872 and for some time was incumbent of Carrigaline in County Cork. His love for zoology and exploration asserted themselves. He did much deep sea dredging and discovered mackerel spawn off the Aran Islands in the spring of the year, showing the possibility of the further development of the Irish fisheries. He was appointed Government Inspector of Fisheries and later Commissioner of the Congested Districts Board. He journeyed to New Zealand and reached within 200 feet of the summit of Mt. Cook, being thwarted of complete triumph by bad weather after a fine climb. His book, "The High Alps of New Zealand," is well known. In 1888 he spent the summer in our own Selkirk Range, his experiences being related in his book, "Among the Selkirk Glaciers," which appeared in 1890. When the Alpine Club of Canada was organized in 1906 Mr. Green was elected an Honorary Member, a distinction which he much appreciated. He was, however, in spite of many invitations, unable to visit Canada again. His book will keep his memory green for many a year.

MARGARET SPRINGATE

The death occurred on November 17th, 1918, of Margaret Springate, a popular and energetic worker in the Winnipeg Section of the Alpine Club. She died suddenly of influenza. For four years she was the Local Secretary, but whether in office or not, she was an inspiration, organizing interesting gatherings and making the annual dinner a successful function. At the time of her death she was President of the Women's University Club.

Miss Springate joined the Alpine Club in 1907 and attended the Camp at Paradise Valley in that year, graduating on Mt. Aberdeen. From the first she was eager and proved a worthy apprentice. From this Camp she made the hardy expedition which encircled Mts. Lefroy, Ringrose and Hungabee, crossed the five passes — Mitre, Abbot, Opabin, Wenkchemna and Wastach; traversed five glaciers— Lefroy, Victoria, Opabin, Wenkchemna and Horseshoe. Such an expedition, covering two days, is a more effective test of what mountaineering stuff may be in a novice than the climb of an easy peak like Mt. Aberdeen. Miss Springate stood the test.

After the Paradise Valley Camp closed, Miss Springate exchanged the tramp for the coach, going into the hills for a hundred miles over the old, adventurous Cariboo road. In other years she essayed hardier excursions. In 1908 at Rogers Pass, after the round trip involving Bear Creek, Baloo Pass and Cougar Valley, she made the heroic trip by Asulkan Glacier and Asulkan Pass, thence westerly along the ridge and over Castor and Pollux, traversing the west side of Castor to the Lily Col, then along the Dome, the Rampart and Mt. Afton, crossing Afton's shoulder on the north of Mt. Abbott, descending near the north end and returning by Marion Lake in a drenching rain.

She was not in the mountains again until 1913, when the Club climbed from the Camp in Cataract Valley. In the meantime she had been for a year in England and in Germany, where she taught English in a school of languages at Dessau. Her last expedition

was in 1914. In that year she joined Miss Jobe in the adventure by pathless valleys and passes northwest of Mt. Robson to Mt. Sir Alexander, the distance travelled through forest by saddle and on foot, being nearly 400 miles the round expedition. The northern end of the journey involved "back packing," the strenuous method known to all true mountain adventurers.

Miss Springate never wrote any account of this interesting journey into virgin mountain country. Her friends urged her, and they hoped to get from her ready pen the story as told with such naiveté and humour to the Winnipeg Section of the Club. For the last six months of her life she had been librarian in the Free Press Editorial Department and had made a promising beginning in journalism. She had a racy style, a quick mind, a keen and nimble but very kindly wit. For some ten years she had been a teacher of Latin, French and German in Havergal College, Winnipeg, the last year of service there including the duties of house mistress. She had a special talent for Latin, but hers was a fair gift of "all the talents." She possessed a singing voice of considerable power, trained by a local teacher. To hear her sing "Land of Hope and Glory" was to feel the thrill of England's spiritual empire. Her social gifts were those that made for light hearted companionship. And she had a loyal soul, the genius for friendship. "The golden gift that nature did thee give to fasten frendes."

Essentially a child of the open air, Miss Springate was the leading spirit of a walking party that on Saturdays in all seasons tramped the roads leaving Winnipeg or the woodland trails along the two rivers. She will be missed for many a year and remembered always for her radiant spirit, her innocent gaiety and laughter, her joy in all of life that makes for healthy human delight.

ELIZABETH PARKER.

ALPINE CLUB NOTES

My Familiar Mountains in Canada—By F. W. Freeborn

During the past year, 1918, Mr. F. W. Freeborn presented to the Club a delightful photographic album of his views taken in the Canadian Rockies since he first joined the Club as an original member in 1906 and up to his serious illness of 1914, which prevented his taking a further active part in the Club's camps. Notwithstanding his heavy handicap Mr. Freeborn kept active in mountain matters as the album of views here referred to well shows. I may here add that Mr. Freeborn was at the first camp held by the Club at the summit of Yoho Pass in 1906 and was not absent from an Annual Camp up to the time of his illness in 1914.

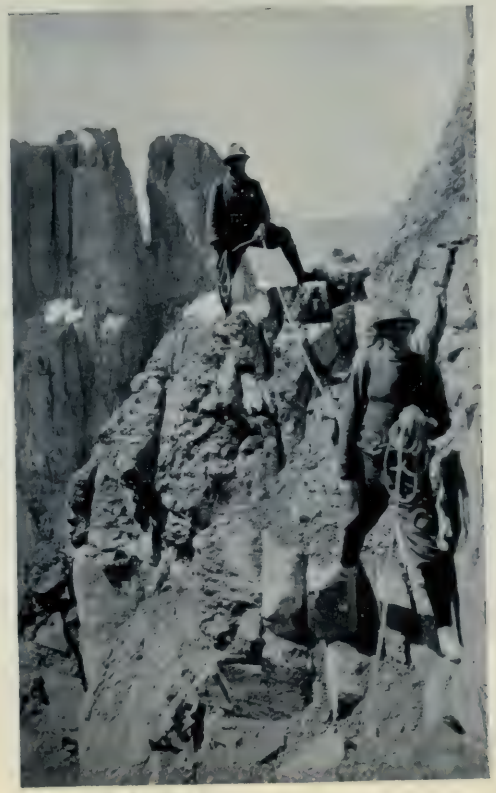
At these early camps we had a number of photographic competitions—a feature which is this year (1919) revived through the energy and hard work of Mr. C. G. Wates, of Edmonton, and the Committee of which he is chairman—and at them Mr. Freeborn figured prominently. In fact, I believe, he carried off a number of the prizes. I have noted Mr. Freeborn's results from year to year with deep interest and have seen him progress from a very amateurish standard to one of a high class grade that a professional might well be proud of, culminating in the results for the year 1913 at the Robson Pass Camp.

There are some 250 views in the album, which is in itself, apart from the direct interest and appeal of the views to all mountain lovers, a magnificent gift. On the front page is a general table of contents and in a pocket at the back a detailed index of the pages, the views to be found on them, the subject and date when taken; a very complete, useful and easily read index. Each view bears Mr. Freeborn's private number, which, it is noted, runs as high as 2,074, a view taken of Mt. Field from the train in 1914.

The album is in fact a very valuable historical, topographical and scenic record of the Canadian Rockies as centered about some of the best known and most visited beauty spots and, to one who knows and can read between the lines, is a book of delightful reminiscences and happy memories. Many of the major mountains of past camp grounds are illustrated from various points of view: Temple, Victoria, Lefroy, Stephen, Cathedral, Sir Donald, Rogers Peak, Mt. Robson, etc.

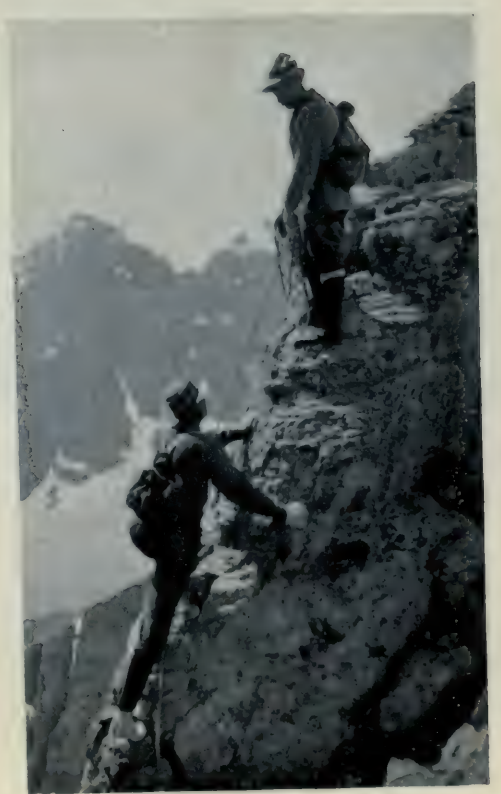
Inserted near the end of the volume are a few pictures of Mt. Hood, including two especially, showing snow formations of striking peculiarity from weathering and the action of the sun, wind and rain. One also taken on Mt. Hood shows a bergschrund of which the upper lip is hung with icicles and is very remarkable.

There are many pictures showing climbing parties in action, and among them Mr. Freeborn frequently appears. Judging by his looks and those of the members of the parties he is leading, or by the more exacting and dangerous climbs where professional Swiss guides



Photo, L. H. Lindsay

ON PINNACLE MT., 1918 CAMP
Between the Fixed Ropes



Photo, L. H. Lindsay

ON PINNACLE MT., 1918 CAMP

play a part, it is all taken very seriously and an immense amount of happiness and pleasure is derived from it. And why not? All who visit and climb in the Great Hills are gripped by their fascination and held for a return to them again and again. After four years of desperate and sanguinary fighting the mountaineering veterans of the Great War are still eager for a tussle with the Giants of the Rockies.

This is not the only volume of views Mr. Freeborn has presented to the Club. The previous presentations, seven in number, deal more directly with the camps that he attended and their activities. They represent a large amount of work such as only a lover of the mountains could accomplish and are a very valuable gift.

ARTHUR O. WHEELER.

Wiwaxy Lodge

Some years ago the Canadian Pacific Railway built a mountain hut on the meadow near Lake O'Hara, hoping it would be of use to the climber and camper. The irresponsible and unrespected trippers treated this in their usual fashion and it became useless for its purpose. Last summer Mr. Val. A. Fynn, one of our members repaired and refitted this hut at his own expense and, in conjunction with the Dominion Park authorities, a set of simple rules was drawn up which it is hoped will be observed by the most unthinking.

Immediately on arrival visitors are requested to register in the book provided for that purpose, not that there is any desire for unimportant autographs, but that some idea may be formed of how much and how well the hut is used. A supply of dry wood is stacked there. This, of course, will be replenished by each visitor, leaving the wood pile at least as large as it was found. All fires must be utterly extinguished and the hut and its surroundings left in a clean and orderly condition.

The equipment includes a stove, a broom, six mattresses, a crosscut saw, an axe and a shovel. All cooking utensils and other supplies must be brought by the traveller.

The Park authorities will keep strict watch over the hut and it is hoped that should travellers find any trace of disorder they will at once report the matter. It is only by constant care and watchfulness that such huts, badly needed as they are, can be preserved among the mountains.

Bibliography

Attention has been called to several errors and omissions in the Bibliography of the Canadian Mountain Region, published in our issue for 1918.

On page 160 there is a misprint. Line 18, Palliser's Report contains 325 pages, not 32, as printed.

Omissions are:

1820 Franchère, Gabriel. Relations d'un Voyage à la Côte Nordouest de l'Amerique Septentrionale dans les années 1810, 11, 12, 13 et 14. Par. G. Franchère, fils.

1872 McDonald, Archd., Chief Factor H.B. Co. Canoe Voyage from Hudson's Bay to Pacific in 1828. Edited with notes by Malcolm McLeod.

1872-1882 Fleming, Sir Sandford. Reports.

1874-5 Hanington, C. P. Journal from Quesnelle through the Rocky Mountains.

1882 Baillie-Grohman, W. A. Camps in the Rockies. Should not have been included as it deals exclusively with the United States.

1907 Canadian Alpine Journal. Issued yearly.

Recent publications are:

1917 Alberta and British Columbia Boundary Report and Atlas, Part I., 1913-1916. Commissioners R. W. Cautley, J. N. Wallace, A. O. Wheeler, Ottawa.

1917 Department of the Interior. Description and Guide to Jasper Park.

Annual Celebrations

As most members of the Club know, it was founded in Winnipeg on March 27th and 28th, 1906. Since then it has been the custom among the various Sections of the Club to mark one or other of the birthdays by some celebration at which the principal events of the Club's life are commemorated. It is much to be desired that there should be uniformity in the dates observed, as otherwise the true meaning of the celebration is missed. This year the festival was observed by the Vancouver Island, Vancouver, Calgary, Edmonton, Winnipeg, Toronto and New York Sections. At these meetings the address of the Director summarising the history of the Club for the past year was read, and speeches made concerning the Club and its work, in many cases illustrated by lantern slides of great interest. Such gatherings serve to keep up the strong mountain spirit of the members and to bind together the various sections in one body with Canada's mountain country as its sustaining interest.

Change of Name

The name of Mt. Habel in the Yoho region has been changed to Mt. des Poilus by the Geographic Board of Canada in appreciation of the magnificent services of our French allies in the Great War.

REVIEWS

Report of the Alberta and British Columbia Boundary Survey, Part I., 1913 to 1916, including Atlas*

Through the courtesy of Dr. E. Deville, Surveyor General of Dominion Lands, the Club House library is now in possession of a most useful publication issued from the Surveyor General's office. This publication takes the form of a report describing the various operations of the Interprovincial Boundary Commission in delineating the boundary between Alberta and British Columbia over an area extending from the International Boundary to the Kicking Horse Pass. A splendid atlas accompanying portrays the map work. Both are in book form and very neatly arranged and printed on splendid paper. The work covers the operations of the Commission from its inception in 1913 to the completion of the 1916 surveys.

The Interprovincial Boundary Commission as first formed in 1913 was composed of three members, viz., J. N. Wallace, D.L.S., Dominion representative, A. O. Wheeler, B.C.L.S., British Columbia representative, and R. W. Cautley, A.L.S., Alberta representative. These three gentlemen carried on the work of the Commission until July, 1915, when the Dominion Government decided that its interests could be looked after by the Alberta representative, Mr. Cautley. So, from July, 1915, Messrs. Wheeler and Cautley have carried on the boundary work to the satisfaction of the various governments involved.

In chapter one of the Report the Commission deals with the necessity of such a survey and gives the reports and minutes of the different governmental executives, relative to the preliminary arrangements for beginning the survey of the boundary. By mutual consent the Surveyor General of Dominion Lands was authorized to make arrangements for carrying on such a survey. In chapter two appears the instructions issued for this work, including decisions to be made where technical difficulties might arise relative to watershed. It might here be stated that the boundary between Alberta and British Columbia follows the continental divide north from the International Boundary to the one hundredth and twentieth meridian. Following the instructions received the Commission describes methods of survey employed. In a survey of this kind topography is required for a short distance on either side of the boundary, so a party under Mr. Wheeler was given control of the topographical survey. Photo-topographical methods were used, based upon a triangulation system. In the various passes and summits the boundary is marked by monuments, of which full description is given. Mr. Cautley had charge of the line work in the passes. Photographs were taken of each monument as a means of identification.

*Office of Surveyor General, Ottawa.

From the point of view of a surveyor or engineer, chapter two is of great interest, as the writers go into the minutest details of survey operations and of the construction and erection of the monuments. The average Alpinist will probably not go into this as carefully as he will the descriptive matter following in chapters three to six.

In these chapters are given the reports of the Commission upon survey operations for each year from 1913 to 1916. Reference is made continually to the atlas accompanying, of which I will make mention presently. Each pass is dealt with separately, giving the history and origin of the name. Then follows a description of the topography. In connection with the Kicking Horse Pass, it will be of interest to many to note the derivation of the name. I have heard so many people state that this pass is named in such a way because the rock face to the north portrays a kicking horse. The name comes in a different way, however, and was painful in the memory of the late Sir James Hector. As Dr. Hector he was geologist to the Palliser expedition in 1858. At the confluence of the Beaverfoot and Kicking Horse Rivers he was kicked by a pack horse and invalided for a day. Hence the name which has "stuck."

In addition to the passes is a graphical description of the mountain masses between these, written as only a mountaineer can write. Numerous elevations are given which, with other details regarding trails, etc., make the Report of great value to the tourist and Alpinist. A most interesting description is given of the Mt. Assiniboine area, which will be the scene of the Welcome Home Camp of 1920. It is well worth while for members who intend to be present at this camp to consult the Report and Atlas should occasion present itself.

Reproductions of many fine mountain photographs are given throughout and are of the greatest interest. They are the selection from hundreds of pictures taken by Mr. Wheeler and party in the execution of the topographical survey. One photograph of more than ordinary interest is that of Mt. Ptolemy. Mt. Ptolemy is a unique specimens in Nature's vast architectural design. The profile of the ridge resembles that of a mummy in so much that, when the photograph is turned on edge, one would imagine that he held a portrait of an ancient Egyptian monarch in hand.

Following chapter six is given a short description of the Atlas, and Appendix I. describes each monument erected and also gives a photograph of each. Appendix II. is a table of latitudes and departures referring brass bolts and cairns to the nearest monument in the passes.

The Atlas accompanying consists of 16 sheets of mountain topography along the boundary together with 10 detailed sheets of the passes, giving positions and altitudes of the various monuments. The work upon these sheets is a most excellent specimen of mountain map work and is done from the originals supplied by the topographical party under Mr. Wheeler, assisted by A. J. Campbell, D.L.S. It is a four-color work. Contours are in a light brown, trails and roads are in red. Water, glaciers and snowfields are in blue and all other information in black.

The Atlas will be of greatest utility as a work of reference for the tourist intending to explore any of the areas shown. Altitudes

of all principal features are given and many previously unnamed peaks now have a designation, the significance of which will always be recalled in centuries to come. I refer to such names as Mt. Foch, Mt. Sir Douglas, Mt. French, Mt. Jellicoe, Mt. Currie, Mt. Beatty, Mt. Joffre.

Such works as this Report are of untold value to a mountaineering Club, and the Alpine Club of Canada will look forward to possessing future reports of the Interprovincial Boundary Commission.

R. D. McCaw.

Description of and Guide to Jasper Park—Edited by E. Deville*

Dr. E. Deville, Surveyor General of Dominion Lands, has presented the Library of the Alpine Club of Canada with the above named Guide. The Guide is the outcome of a photographic survey of the central part of Jasper Park executed in 1915 by M. P. Bridgland, D.L.S., an Active member of the Club. The topographical part of the Guide was written by him and the historical notes by R. Douglas, Secretary of the Geographic Board. The illustrations, which are mostly from survey photographs, were selected and arranged and the book edited by Dr. Deville.

It is stated in the preface that the map of the Bridgland survey on a scale of 1/62,500, about a mile to an inch, has been published in six sheets, 19 by 22 inches, and is sold at 15 cents per sheet, or, mounted and dissected for the pocket, at 50 cents per sheet.

The price of the Guide Book is 50 cents.

The Guide is a thin, nicely bound volume, beautifully gotten up and magnificently illustrated. It is of very great interest and value, specially owing to the chapter on the records of early travel in this historic ground, and the accurate, detailed topographical information written by Mr. Bridgland from his survey notes.

The Athabaska route, ever since its discovery in 1910 by David Thompson, has been of abiding interest and much has been written of the travels and adventures of the first pioneers, explorers of the North West and Hudson's Bay Fur Trading Companies.

In his chapter, "Location and Early History of the Park," Mr. Douglas has compiled a succinct general history outline from the early days of exploration to the present time, touching upon the explorations of David Thompson, Gabriel Franchère, Ross Cox, Alexander Ross, David Douglas, Rev. J. P. De Smet, Paul Kane, Milton and Cheadle, Sir James Hector and Sir Sandford Fleming. For purposes of accurate reference this chapter of the Guide is specially valuable.

The remaining chapters deal generally with the Park area and its special attractions in the various trips that can be made from Jasper, the principal townsite, and from Pocahontas, a village within its confines; also with the natural history and more striking scenic features.

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*Department of the Interior, Ottawa.

The topographical portion by Mr. Bridgland is from information he obtained while making his surveys of the central portion of the Park. These surveys were made by the method of photo-topography and have enabled him to provide the splendid topographical illustrations for which the Guide Book is particularly notable.

The maps accompanying it are very good. They are accurate and up-to-date, and contain the fullest information concerning the topography of the country defined.

Appendix A, giving a list of trips that can be made from Jasper, is useful to tourists.

Appendix B gives the place names and their heights and origins. There is a good index which enables the Guide to be used to advantage with rapidity.

The book itself is most tastily published and the arrangement and editing are exceptionally well done. The greatest credit is due Dr. Deville for this very attractive and desirable guide book, and it is to be hoped that he will extend his results to the Rocky Mountains Park, or at least to the central portion of it along the Canadian Pacific Railway and the parts more generally travelled by tourists.

While not of so great historical interest as the other two, a similar guide to Waterton Park would embrace and disseminate a knowledge of a considerable section of the mountain regions that contains much of interest and scenic attraction.

ARTHUR O. WHEELER.

The Canoe and the Saddle—By Theodore Winthrop*

"Klalam and Klickalat" was the author's original name for the diary of his romantic and hazardous trip across the Straits of San Juan de Fuca and through the States of Washington and Oregon by way of the Cascade Mountains and the Columbia River during the pioneer days of 1853.

Travelling alone with Indian guides, who proved too often mutinous and treacherous, Winthrop's recital makes thrilling reading. In one instance he escaped massacre only to find himself in the still perilous position of a solitary traveller in an unknown region peopled by hostile tribes. From one difficulty after another he was successfully extricated by the Hudson's Bay Company at Fort Nisqually, the missionary priests, Fathers Charles Pandosy and D'Herbomez, and finally by a detachment of American officers at Fort Dalles, whehe he was nursed through smallpox at the quarters of Major Alvord.

Though the book deals chiefly with the history of the Northwest, it is supplemented by letters to the author's family wherein he describes his journey across the isthmus of Panama and along the Pacific Coast, where he visited San Diego, Monterey, San Francisco, Seattle, Portland and Victoria. At Victoria his story begins and though it leaves him at the Dalles, having achieved the impossible in canoe and saddle in the perilous trip related, his subsequent diary continues the account of his homeward journey by caravan across

*John H. Williams, Tacoma.

Photo, W. A. Lincoln

ON HORSESHOE GLACIER
Below Mitre Pass

Photo, W. A. Lincoln

RETURN FROM CLIMB OF PINNACLE MT.
1918 Camp

the prairies, through Mormon land, and finally back to Connecticut. With the Seventh Regiment of New York, he served in the Civil War, meeting death in the engagement of Great Bethel, June 10th, 1861. He was thirty-two years of age.

He was a scholar and a gentleman and typical for his nationalism at a time when sectionalism threatened to disrupt the Union. His letters show him to have suffered ill health, yet, with the handicap of an inferior physique, he achieved in the strenuous days of his explorations what a more robust pioneer lacking Winthrop's indomitable courage would have hesitated to undertake.

The Winthrop Glacier of Mt. Ranier-Tacoma is named after the author who, in his book, devotes much space to the disputed christening of this famous mountain. Starting out by deploring the custom of naming our grandest peaks in memory of obscure men, he proceeds to demonstrate that, contrary to the recent finding of the U.S. Geographic Board, the word Tacoma, though in itself generic rather than specific, was used specifically by the Indian when referring to Mt. Ranier. In proof of which he states that the word Tahoma or Tacoma when given a special accent on the second syllable meant exclusively Ranier and when pronounced otherwise applied to all snowcapped peaks.

Winthrop was a lover of Nature and delights in minute descriptions of the mountain flora. There are exquisite pen pictures of the noble scenery through which he travelled. His imagination was always fired at night by the weirdness of the starlit solitudes, and many a vigil he kept within the forests primaeval while his red-faced guides, spent with exhaustion, snored beside him. The narrative is interspersed with legends told by his guides.

An interesting chapter deals with the Citizen's Road, the construction of which has been erroneously credited to McClellan, who never even saw the pass named in his honour, whereas his subordinate, Edward (afterwards Colonel) Jay Allen, when only twenty-two years of age, with the enthusiasm and perseverance of youth, achieved a miracle of engineering in the face of financial discouragement.

The book is a treasury of general information. Winthrop's mind was like a record that received and repeated the most insignificant transactions relating to the settlement of the Great Northwest. The price of lots in the city of Victoria, the rules and regulations of the Hudson's Bay Company and the relative value of Indian blankets versus squaws are most deliberately inscribed.

It contains, moreover, a vocabulary of the Chinook jargon, of which Winthrop was a conscientious student.

The Canoe and The Saddle was first published fifty years ago, but has long been out of print. Recently the frequent demands for a new edition led to the present volume.

There is an introduction by John H. Williams, author of "The Mountain That Was God," as well as appended reminiscences by General Hodges and Colonel Edward Jay Allen; while sixteen colour plates together with maps and more than one hundred other illustrations lend additional interest to the work.

In speaking of Winthrop, George William Curtis once said: "His death was as great a loss to American literature, as that of Keats to English poetry."

RHODA WALKER EDWARDS.

Far Away and Long Ago—By W. H. Hudson*

This book is scarcely within our category. It is not a mountain book, but appeals to every lover of Nature. Mr. Hudson has written many books on birds, stories of natural history, in English which it is a delight to read. Now he tells of his youth in early Victorian days on the South American Pampas.

It is a commonplace statement that as one is drowning the events of one's past life rush up before the memory. There seems no evidence of the truth of this but the belief is general. In similar fashion during a severe illness Mr. Hudson lived again the long forgotten past. Finding his memories of vivid interest, he jotted down notes of the various incidents and this book is the result.

"It was to me a marvellous experience; to be here, propped up with pillows in a dimly lighted room, the night nurse lightly dozing by the fire, the sound of the everlasting wind in my ears howling outside and dashing the rain like hailstones against the window panes; to be awake to all this, feverish and ill and sore, conscious of my danger, too, and at the same time to be thousands of miles away, out in the sun and wind, rejoicing in other sights and sound happy again with that ancient, long-lost, and now recovered happiness."

The description of his earliest home will appeal to those who know the prairie, though the prairies of the northern and of the southern continent are widely different. It was remarkable in that it was on rising ground in the midst of the level pampas above a tributary of the Plata, and was called after its distinguishing feature, "The Twenty-five Ombu Trees." In that country every one rode. It was the common saying that a man without a horse was a man without legs. Even here it is only to-day that people are beginning to appreciate the benefit and the pleasure of walking.

The first visit of a country lad to a city is always an epoch in a life. Buenos Ayres to-day is the wealthiest, most populous Europeanised city in South America. Those were the days of dark and narrow streets paved with coble stones, of night watchmen who called the hours, with whom the gay youths fought and spoiled of their staves and lanterns as did the English youth in the times of the Georges, the days of Tom and Jerry and Corinthian Kate.

Our author did not see Rosas, "The Nero of South America," whom his father greatly admired and whose portrait was the chief ornament of his home. He was "certainly the greatest and most interesting of all the South American Caudillos or leaders who rose to absolute power during the long, stormy period that followed on the war of independence." Many of his acts "to foreigners and those born in later times might seem the result of insanity, but were really the outcome of a peculiar, sardonic and somewhat primitive sense of humour on his part which appealed powerfully to the men of the plains, the guachos, among whom Rosas lived from boyhood, and by whose aid he eventually rose to supreme power."

Mr. Hudson, however, is more interested in the odd characters he

*E. P. Dutton & Co., New York.

came across than the story of politics; beggars, wandering tutors, frontier Englishmen of strange varieties, a patriarch of Spanish descent who was husband of six wives all living with him in the same house—a man esteemed and beloved by all.

His father was a brave and kindly man. From his mother came the love of Nature which pervades the book and has been the interest of his life. This it is impossible to bring into a review of limited space—it is an atmosphere not a series of incidents. It is best expressed in his closing words:

"I know that mine is an exceptional case, that the visible world is to me more beautiful and interesting than to most persons; that the delight I experienced in my communings with Nature did not pass away leaving nothing but a recollection of vanished happiness to intensify a present pain. The happiness was never lost, but, owing to that faculty I have spoken of, had a cumulative effect on the mind and was mine again, so that in my worst times I could yet always feel that it was infinitely better to be than not to be."

S. H. MITCHELL.

The Human Side of Animals—By Royal Dixon*

In this book Mr. Royal Dixon adds another and, perhaps, the most important phase to his already published books, "The Human Side of Plants," "The Human Side of Trees" and "The Human Side of Birds."

In it he collects in a number of chapters the similarity of the habits and customs of various animals to the human being. Seeing that original man, the cave man and the tree man, lived amidst conditions that were practically the same as those of his prototype in the animal world, the more intelligent species of apes, it is not to be wondered at that many points of similarity can be found and that the primal instincts of existence should in their first meanings be the same.

Reading Mr. Dixon's book and following out his parallelisms it might well be supposed that in the first cave conditions were much the same for both, but that the human species has evolved more rapidly to a high state of civilization in which the more easily tamed and more easily domesticated animals take a share as co-workers and companions.

Apart from this side of the question, however, Mr. Dixon's book furnishes much valuable instruction concerning the habits and mode of life of the many different species of animals with which he deals, and one is more than surprised to find that there is so great a similarity to the human animal in their general methods. Much corroborative evidence by eminent naturalists, past and present, is introduced and, generally speaking, the book may be considered an instructive and interesting addition to the natural history shelves of one's library.

The first chapter, "Animals that practice camouflage," is, perhaps, the most interesting, particularly in the light of events concerning

*Frederick A. Stokes Company, New York.

the present world's war. All who have lived with Nature, to a greater or lesser degree, are acquainted with this phase of existence of the lower forms of life. To it is largely due the apparent absence of life in the forest, on the plains and in the mountains that is often commented upon. But animal life is generally there. The eminent naturalist, Professor John Macoun, once said to me when I complained of the absence of animal life in certain parts, "If only you will efface yourself and keep quiet you will find it is going on all around you."

Chapter V., "Miners and Excavators," and Chapter X., "Animal Architects, Engineers and House Builders," are of special interest. The everyday traveller in the Great Out of Doors frequently sees an animal disappear into its hole, but seldom stops to consider where or to what that hole is an entrance. Mr. Dixon gives valuable instruction in this connection and opens up an underground world of life that will be found distinctly new matter to many of his readers. Reading his lines one wonders at the time, patience and intelligence that is bestowed upon the construction of the animal cities beneath the sod by their inhabitants and also of the wonders that exist of which we have no knowledge. In the latter chapter the beaver is featured as a most intelligent constructor and engineer. The writer of the review can here corroborate all that is said by Mr. Dixon. In the course of a lifetime spent in the forests, on the plains and in the mountains, he has seen many works by beaver, some of them great works of scientific engineering skill, which would compare with the best results of trained intelligence. It has always been said that the animals work and travel only at night; such is not the case, for the writer has seen beaver working in the day time at Yellowhead Pass in the Canadian Rockies. Only last summer, while his pack train was travelling from Banff to Lake Louise, well known beauty spots of the Canadian Rockies, a beaver was met in broad daylight coming down the driving road. Did it leave the road and disappear quickly? *Not much!* It stood its ground, showed fight and stampeded the pack train which practically fled from it. It can thus be seen that the force of evolution towards a higher civilization is still going on in the animal world.

Mr. Dixon is to be congratulated upon his delightful book, which will come as a boon to all lovers of the animal part of Nature, than which there is none more interesting and instructive, no matter in what habitat it may be observed. Animals, birds and insects and their ways are a source of delight and recreation to all who love Nature and the Great Out of Doors, and any collective light on the subject, such as the volume under discussion, is a valuable gift to the general community and cannot but be highly prized.

ARTHUR O. WHEELER.

Steep Trails—By John Muir*

John Muir is so intimately associated with California that one feels inclined to describe this book in Spanish phrase as an olla podrida, or, more familiarly, a mulligan. It is a collection of good things gathered from various papers published from 1874 to 1902.

*Houghton Mifflin Co., Boston and New York.

Much of the descriptive portion no longer applies to the neighborhoods dealt with, which have greatly developed of recent years. It is strange to-day to read of Pasadena, the millionaire's winter town, as: "Now numbering sixty families mostly drawn from the better class of vagabond pioneers who, during their rolling stone days, have managed to gather sufficient gold moss to purchase from ten to forty acres of land. . . The conversation of most I have met is seasoned with a smack of mental ozone."

Even in the '70's Muir was sound on mountain questions. "The mountains," he says, "are fountains not only of rivers and fertile soil, but of men. Therefore we are all, in some sense, mountaineers, and going to the mountains is going home. Yet how many are doomed to toil in town shadows, while the white mountains beckon all along the horizon! But many on arrival seem at a loss to know what to do with themselves and seek shelter in the hotel, as if that were the Shasta they had come for. Others never leave the rail, content with the window views, and cling to the comforts of the sleeping car, like blind mice to their mothers. None may wholly escape the good of Nature. . . Fresh air, at least, will get into everybody, and the cares of mere business will be quenched like the fires of a sinking ship."

There is an interesting account of a wild night on Mt. Shasta in a blizzard, when the climbers took refuge near the fumeroles of escaping volcanic steam, dreading the fumes of the low-lying gas.

The account of the Grand Canyon of the Colorado is a fine piece of descriptive writing. But it is not possible to deal with the various papers in detail. All possess the charm of Muir's style, which while neither so fresh nor so full of surprises as that of the great masters, has always a certain distinction of its own.

Muir sums up the truth as known to mountain lovers: "Doubly happy is the man to whom lofty mountain tops are within reach, for the lights that shine there illumine all that lies below." "The light that never was on sea or land."

S. H. Mitchell.

North American Cordillera, Forty-ninth Parallel—By Reginald Aldworth Daly

Presented to the Alpine Club of Canada's Library by the Geological Survey of Canada at the request of Mr. James White

The book is a report of the geology of the North American Cordillera at the Forty-ninth Parallel of Latitude—the boundary line between Canada and the United States. It was done under the direction of the late Dr. W. F. King, C.M.G., International Boundary Commissioner, and published as a memoir by the Geological Survey of Canada.

The Report deals with the geology of the mountains crossed by the Boundary Line, and is a very full and comprehensive work in three parts, one of which consists of maps. There are several chapters which treat of the construction of mountain forms and their causes, and on this account are of general interest to all alpine people who study the architecture of the Great Hills as they travel through them.

Dr. Daly, of the Massachusetts Institute of Technology, was attached to the International Boundary Commission as geologist, and carried on the work from 1901 to 1906.

OFFICIAL SECTION

REPORT OF PARADISE VALLEY CAMP

The thirteenth Annual Camp, the fourth War Camp, was held in Paradise Valley on the site of the Camp of 1907, from July 16th to July 31st, 1918. The situation was a charming one, under the shadow of Mt. Temple, with a fine view of the north wall of Hungabee. At once the visitor realised that he was in the heart of the big mountains.

An outlying Camp was pitched in Consolation Valley, on the same site as that of 1910. This was a delightful place of sojourn, but rather far from the good climbs. However, few regret a good excuse for a day off.

The prevailing conditions rendered the attendance very small. Only 54 were placed under canvas. The mountaineering spirit was very keen and there were no loafers nor any evidence of the tourist spirit.

There were present members of the English, Swiss and American Alpine Clubs, of the Appalachian Mountain Club and of the Royal Geographical Society.

Those present at the Camp were drawn from the following places:

CANADA

British Columbia: Cameron Lake, Field, Golden, New Westminster, Sidney, Vancouver.
Alberta: Banff, Calgary, Carmangay, Edmonton, Irricana.
Saskatchewan: Melville, Saskatoon.
Manitoba: Lenore, Winnipeg.
Ontario: Toronto.

UNITED STATES

Connecticut: Stamford
Georgia: Atlanta.
Massachusetts: Boston.
Missouri: St. Louis.
New Jersey: Orange, Summit.
New York: New York.

SWITZERLAND

Interlaken.

THE ANNUAL MEETING

The Annual Meeting was held in the dining pavilion on the afternoon of July 27th. In the absence of the President and the Vice-Presidents the Director took the chair.

The President's address was read. Mr. Patterson expressed his regret at his inevitable absence from the fellowship of the Club. He had been able to keep in full touch with all important matters concerning its welfare. He suggested that a message of appreciа-

Photo, D. M. Sinclair

GENTLEMEN'S QUARTERS, PARADISE VALLEY CAMP, 1918

Photo, D. M. Sinclair

THE EFFECT OF A SNOWSTORM—1918 CAMP

tion be sent to all members overseas, and urged that every member should do his part to preserve the vital traditions of the Club.

Communications were read from the two Vice-Presidents, Dr. W. E. Stone, The Colorado Mountain Club, the Vancouver Section, and Mr. F. W. Freeborn, expressing regret at their absence and continued enthusiasm for the Club and its objects.

The Director then read his report, giving an account of the doings and standing of the Club since the last meeting. He informed the meeting that the Club had been asked to take part in the Congress of Alpinism, called by the Club Alpin Français to be held at Monaco after the war. He urged each member to realize that he had a duty to perform for the great mountain heritage and the Alpine Club of Canada.

The Secretary-Treasurer, in his report, stated that the finances were only preserved in a satisfactory condition by the utmost care. Full co-operation of each member was required. The Club was in need of increased membership.

The amendments to the Constitution, suspending the election of officers for the duration of the war and creating a class of War Members in Life Membership, were declared passed.

A resolution of appreciation was passed to be sent to all members on war service, and another of sympathy and congratulation to the released prisoners of war.

The suggestion of a committee of the Club to deal with photographic matters was discussed and left in the hands of the Executive for action.

The usual vote of thanks to all who had helped the Camp was passed and the meeting adjourned.

REPORT ON MOUNTAINEERING AND EXPEDITIONS

Mt. Temple dominated the Camp but was a very simple climb. In 1907 the ascent of it and Mt. Aberdeen were considered serious. In 1918 they were looked upon as well enough for training, but not the real thing. Mts. Pinnacle and the Mitre were climbed by quite a few parties and Pinnacle for the first time by ladies. A very interesting training ascent of Aberdeen was made by the Sheol Rocks and Mt. Haddo. A traverse was made of Glacier Peak down to Lake O'Hara.

Fascinating excursions abound in the neighbourhood, most of which are familiar. One, however, a very simple climb, was found well worth the making. Between Wastach Pass and Hungabee rises a dome shaped mountain slightly under 10,000 feet in altitude, which is easily climbed from the summit of the Pass. It is the key to many valleys and commands a superb view.

The professional guides were Edward Feuz and Christian Hasler, who as usual gave great satisfaction.

Nine passed the test for Active membership. Their names follow:

Mt. Aberdeen, July 18th
Miss G. J. May
D. F. Burnett
L. McKim
A. C. Tate
H. Herriott

Mt. Temple, July 22nd
Miss M. L. Derbyshire
E. W. Crawford

Mt. Aberdeen, July 24th
Miss M. K. Wilson
E. T. Hayward

ANNUAL REPORT OF THE PHOTOGRAPHIC COMMITTEE

At the Annual Meeting in Paradise Valley in the summer of 1918 a resolution was passed authorizing the formation of a committee to have charge of the photographic activities of the Club. This Committee was to have a member in each of the Local Sections and during the fall these were elected, with the result that the Committee stands as follows:

Vancouver Island	R. D. McCaw
Vancouver	Herbert O. Frind
Calgary	M. P. Bridgland
Edmonton	Cyril G. Wates (Chairman)
Winnipeg	A. A. McCoubrey
Toronto	J. Addison Reid
New York	F. W. Freeborn
London	Not heard from
Ex officio	The Director

At the time that the formation of this committee was suggested it seemed likely that its activities would be chiefly concerned with war work, but now that our soldier members are returning from overseas the question of laying out a broad and liberal policy to govern the photographic activities of the Club has become of principal importance. This the Committee has attempted to do, and, in spite of the difficulties involved in the interchange of ideas through the mail, many suggestions have been received and co-ordinated into what we believe is a really workable plan.

One thing that seems to have struck all the members was the need of so organizing the work that it could be carried on with a minimum of labour and expense and in such a way as to allow of unlimited extension in all directions as time passed.

The value of photographic records cannot be overestimated, and increases as they become older. It devolves upon every member of the Club who uses a camera in the mountains to see that nothing which may be of interest escapes him and that all such records, no matter how trivial they may seem now, are placed at the disposal of the Club for future reference.

A brief summary of the objects which the photographic committee hopes, in some measure, to attain are:

(1) The promotion of interest in and knowledge of the art of photography in the mountain regions of Canada.

(2) The education and entertainment of the members of the Club.

(3) The education of the general public to the wonders of the Canadian mountains and the unlimited scope for health-giving recreation to be found among them.

(4) The recording and collecting, by means of photography, of a mass of information with regard to the Canadian mountains which will be systematically arranged so as to be available at all times for purposes of reference.

Some of the means by which the Committee proposes to further these objects are as follows:

Print Collection

There are at the present time a number of albums of photographs in the possession of the Club, most of which have been contributed by members. They will form an excellent foundation for a general collection of prints which the Committee hopes will ultimately illustrate all regions of the Canadian mountains and all the varied interests which it is the aim of the Club to promote.

In order that such a collection be of the greatest possible value it is essential that it should be so indexed and classified that all photographs illustrating any given subject can be easily referred to. In the absence of a paid official whose duty it would be to take charge of this work, it is desirable that these processes should be made as nearly automatic as possible.

The work naturally divides itself under three heads:

Collection;
Recording;
Classification.

To make the work included under the first two heads as light as possible the Committee are having printed a number of cards suitable for filing in the form of an index. There will be one of these cards for each print, which will provide space for all information of interest, and it is intended that members giving prints shall be asked to fill in the cards. Once a year (or oftener if desirable) the Committee will examine and classify all prints, placing the cards on file after adding such additional information as may be deemed of interest. The decimal system, commonly used in libraries, will probably be used in classifying the prints, as it allows of unlimited extension and subdivision.

As time passes and the collection increases in size, a system of cross-indexing will be added and albums will be built up of such prints as the Committee may select. Each print will bear a number to facilitate immediate reference to the corresponding card in the index and the prints will be so arranged—both in albums and drawers—that any print may be quickly found from its corresponding card.

It is only possible to refer briefly to a few of the possible uses of such a collection. Let us suppose that a party arrives at the Club House with the intention of making an attempt on Mt. Assiniboine by a new route. Perhaps there is considerable doubt in the minds of some of the party as to the practicability of some portion of the proposed route. A reference to the card index under the heading "Mt. Assiniboine" immediately gives a list of all photographs in the possession of the Club bearing on the subject, whether in albums, on file or framed on the walls, and a definite answer will probably be found to the vexed question.

Again, let us suppose that photographs are wanted to illustrate an article for the Canadian Alpine Journal or for some other publication. A visit to the card index will immediately give what is desired and will also give informaton as to the owner of the negative and whether the said owner is willing that the print in question shall be used for publication.

Questions of scientific importance will also be referred to the collection, such as the disappearance of lakes, changes in the outline of glaciers, etc.

I have referred at some length to the matter of a classified collection of photographs because the Committee regards this as the foundation of all photographic work in connection with the Alpine Club of Canada. Such a collection, once started, will furnish material for sets of lantern slides, albums, enlargements for the decoration of the Club House and for art exhibitions, besides the more important uses previously referred to.

The Print Collection can only attain its object if the members of the Club will make a point of placing a print from every one of their mountain negatives in the possession of the Committee.

A supply of the index cards has been placed in the hands of each member of the Photographic Committee, from whom they may be obtained for the asking by any member of the Club or any other person who has taken photographs in the Canadian mountains which may be of value. The Committee deem it unwise to place any restriction on the contribution of prints. Any and all will be welcome, even when they may seem to the taker to be only of passing interest. Even camp scenes and groups of climbers may acquire a value in the future of which we can have no conception now, especially if they bear a record of the names of persons appearing in them. This hardly needs pointing out at the present time, for all the members of the Club realize the enhanced value of photographs bearing the faces of those members of the Club who have gone from us to pay the great sacrifice. A member of the Committe has suggested as a slogan: "WANTED—10,000 PHOTOGRAPHS OF THE CANADIAN ROCKIES," and, perhaps, it is not too much to hope that the print collection will reach this point within the next five years. With the hearty co-operation of all the members of the Club it should be easily possible.

While photographs on any kind of paper are welcome, it might be well for members having prints made by professional finishers for the Club collection to specify glossy post cards, for all negatives up to post card size. This will make uniform filing an easy matter and the glossy surface is best for the purposes of reproduction.

Lantern Slides

It is sometimes stated that the advent of the motion picture has destroyed the popularity of the stereopticon. This is very far from being the case; in fact, the demand for lanterns and slides has been greatly increased in the past decade. The practicability of the motion picture camera must always be limited by the difficulty and expense attending its use and these elements are of especial force in the mountains.

The Committee plans to form a Club collection of slides which shall ultimately prove a source of entertainment and education, not only to the members of the Club but also to the general public. The Committee approved the suggestion of the Director that a nucleus of this collection be formed by an annual donation of six slides from each of the Local Sections. These slides are to be given in duplicate and it is intended that, if possible, the same practice shall be followed in all donations of slides. This is in order that one complete set of slides may be kept in the possession of the Club at all times for the exclusive use of the members, while the duplicate slides shall be issued for the use of the Sections and lecturers who may desire to use them. As the collection of slides increases and

funds become available, the sets covering various subjects will be augmented and completed by the addition of slides made at the expense of the Club from photographs selected from the Print Collection. If this policy is carried out, a very valuable collection of lantern slides will soon be acquired.

It is important that due credit for the ownership of the Club slides should be given at all times, and it is suggested that lecturers be required to exhibit a slide at the beginning and end of each lecture stating that all slides shown are taken from the collection of the Alpine Club of Canada.

Competitions

It was formerly the practice to hold photographic competitions at the Annual Camps. These have been abandoned of late years owing to the lack of interest largely due to the same persons winning the prizes year after year. With a view to reviving interest in these contests, a set of three competitions has been arranged for this year and suitable prizes offered. The most important of these is a trophy to be known as the Alpine Club of Canada Photographic Cup. In order that the competition for this cup may be made as keen as possible, the Committee proposes to assign a different subject each year and it is hoped that members will be helped to a clearer insight into the beauties of the mountains by a certain amount of specialization and also that it will be made difficult for one competitor to win the cup year after year.

It will naturally depend upon the success that attends the first year's competition whether or not the Committee will feel justified in extending and enlarging this feature. Announcement of the rules governing the contests have been sent to every member of the Club and we hope that the interest displayed will be fully up to our expectations.

Art Exhibits

It is fairly safe to say that every city which is the headquarters of a Section of the Alpine Club of Canada also has an Art Club. The majority of these Clubs hold annual art exhibitions which are largely attended by the general public. It has been suggested that these would furnish a valuable means for the education of the public to the beauties and interests of the mountains.

In one at least of the Local Sections this suggestion has already been carried out on a small scale. The local Art Club gladly acceded to a request from the Alpine Club executive for wall space and as a nucleus to the exhibit, a number of fine enlargements were loaned by the various railroad companies. To these were added photographs of all sizes, mostly the property of members of the Section. This little exhibit was a great success, much interest being displayed by visitors.

This idea has been enlarged upon, as follows: It is proposed that the various Sections and members of the Club be asked to loan one or more enlargements (framed if possible) for the season during which the Art Exhibitions are held—about six months. This would form a collection to be sent from city to city, and, with judicious press publicity, would be a valued feature at the exhibitions, especially if the pictures could be changed each year.

In submitting this report I wish to emphasize again the difficulties which naturally attend the meetings of a Committee separated from

one another by the breadth of a continent. As far as possible I have given an outline of the combined ideas of the members of the Photographic Committee. Whether or not these ideas are carried to a successful consummation will depend entirely upon the enthusiasm with which the members of the Alpine Club of Canada support our efforts. If this movement receives only a part of the support to which its importance entitles it, I feel safe in predicting that the photographic branch of the Club's work will soon take a high place in our mountain activities.

CYRIL G. WATES, Chairman
(202, Syndicate Block, Edmonton, Alberta).

THE CLUB LIBRARY

For obvious reasons there have been no mountaineering books published recently. The list of additions to the library, however, contains several of historic and exploratory interest. The Club is not in a position to buy books, but our members and friends, as will be seen from the list of additions, have been very good.

The usual exchanges have been received. The Journal of the Japanese Alpine Club now contains a section in English. A new addition to our list is the Journal of the Spanish Alpine Club and another work on the Sierra de Guadarrama, north of Madrid. Both are beautifully illustrated and printed and open a window on a region little known to our members. We also welcome the Klahhane Club Annual, the organ of the Olympic Peninsula Mountaineers.

Among books we should like to possess are:

Rydberg (P. A.). Flora of the Rocky Mountains and Adjacent Plains.

Belloc (H.). The Pyrenees.

Freshfield (D. W.). The Exploration of the Caucasus.

Washburn (S.). Trails, Trappers and Tenderfeet.

Weston (W.). The Playground of the Far East.

Mrs. A. O. Wheeler has presented the library with a most comfortable and seductive lounge, which is much appreciated.

General C. H. Mitchell has found time to send us a pair of snowshoes such as are used by the Alpini in Italy and some flowers from Monte Grappa, which Mrs. Warren has kindly mounted and framed.

Col. W. W. Foster has arranged for a couple of machine guns to be sent us.

Dr. Wakefield has given a German helmet and the tail of a "French Pig," as well as some examples of war currency.

The list of additions follows:

Report of the Alberta and British Columbia Boundary Survey. Pub., Department of the Interior, Ottawa. Donor, Dr. E. Deville.
Reviewed on a previous page.

Description of and Guide to Jasper Park. Edited by Dr. E. Deville. Pub., Department of the Interior, Ottawa. Donor, Dr. E. Deville.
Reviewed on a previous page.

Adventures in Alaska. By S. Hall Young. Pub., F. H. Revell Co., New York. Donor, LeRoy Jeffers.

A series of short stories of Alaskan adventure, gathered from the forty years' experience of a northern missionary. A good hunter, a good story teller, a man. The events of life have shown him that charity covers a multitude of sins. Who that does not know all can judge their relative importance? His choice of contributors to various objects in which he was interested is frank and novel. "When a man had been impoverished or made sick through drink I went to the saloons *only* for his relief. In other cases I made general canvass. When collecting money for church purposes I went to everybody *except* the saloon keepers and their following."

The Canoe and the Saddle. By Theodore Winthrop. Edit. and pub., John H. Williams, Tacoma. Donor, Mrs. E. B. Edwards.

Reviewed on a previous page.

Far Away and Long Ago. By W. H. Hudson. Pub., E. P. Dutton & Co., New York. Donor, LeRoy Jeffers.

Reviewed on a previous page.

Geology of North American Cordillera. By R. A. Daly. Pub. and presented by the Geological Survey of Canada, Ottawa.

Reviewed on a previous page.

The Grizzly. By Enos Mills. Pub., Houghton Mifflin Co., Boston and New York. Donor, LeRoy Jeffers.

A series of pleasant talks by this well known writer, containing many facts of interest gathered from the experiences of thirty years.

The Hobo Philosopher. Written, published and presented by Roger Payne, Puente, California.

A plea against the gospel of work.

The Human Side of Animals. By Royal Dixon. Pub., F. A. Stokes Co., New York. Donor, LeRoy Jeffers.

Reviewed on a previous page.

The Indian Corps in France. Bt. Lt.-Col. J. W. B. Merewether and Lt.-Col. Sir Frederick Smith. Pub., John Murray, London. Donor, Mrs. A. O. Wheeler.

An account of the work of the Indian troops on the Western Front. Especially interesting to many Club members from the mention of the name of Major E. O. Wheeler, M.C., on several occasions.

Jungle Peace. By Wm. Beebe. Pub., H. Holt & Co., New York. Donor, LeRoy Jeffers.

The wilds of British Guiana are a far cry from the Rockies of Canada, nor have we space for reviews of books of travel, except those of most serious import, which deal with other provinces of knowledge than our own.

This really charming book is written evidently by a trained observer who sees things in their true perspective, from the appreciation of knowledge. His passing allusion to his homesickness for the great hills and eternal snows is of great interest. The Princess Lointaine, the Lady of Far Away, has us all in thrall.

The book is summed up in a paragraph of the preface: "It is possible to enter a jungle and become acutely aware of poison

fang and rending claw—much as a pacifist considers the high adventure of righteous war. But it is infinitely more wonderful and altogether satisfying to slip quietly and receptively into the life of the jungle; to accept all things as worthy and reasonable; to sense the beauty, the joy, the majestic serenity of this age-old fraternity of Nature, into whose sanctuary man's entrance is unnoticed, his absence unregretted. The peace of the jungle is beyond all telling."

Our National Forests. By R. H. D. Boerke. Pub., Macmillan Co., New York. Donor, LeRoy Jeffers.

The Log of a Timber Cruiser. By W. P. Lawson. Pub., Duffield & Co., New York. Donor, Le Roy Jeffers.

These two books might be described by those who remember a childhood of an earlier fashion, as the powder and the jam. Both deal with the United States Forestry service, and both are of interest in their way. The former summarizes the work of the department, its aims and the results obtained. "The Log of a Timber Cruiser" details in an amusing and attractive fashion with the incidents of a six months' field assignment in the mountains of Southern New Mexico. Many of the relations are vivid transcripts from life, and the whole makes a pleasant and informative story.

Steep Trails. By John Muir. Pub., Houghton, Mifflin & Co., Boston and New York. Donor, LeRoy Jeffers.

Reviewed on a previous page.

The Years Between. By Rudyard Kipling. Pub., Methuen & Co., London. Donor, A. S. Sibbald.

Voyage through North America. By Alexander McKenzie. Donor, Mrs. A. W. Ross.

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